



**CONTRACT DOCUMENTS
AND
SPECIFICATIONS**

**Primary Effluent Pump Station
MCC Replacement**

FOR

TOWN BRANCH WWTP

Bid No. 42-2025

Prepared By: GRW Engineers

Conformance Set

PART 1
ADVERTISEMENT FOR BIDS

INDEX

1. INVITATION
2. DESCRIPTION OF WORK
3. OBTAINING PLANS, SPECIFICATIONS, AND BID DOCUMENTS
4. METHOD OF RECEIVING BIDS
5. METHOD OF AWARD
6. BID WITHDRAWAL
7. BID SECURITY
8. SUBMISSION OF BIDS
9. RIGHT TO REJECT
10. NOTIFICATION TO THE LFUCG FOR AFFIRMATIVE ACTION
11. NOTICE CONCERNING MWDBE AND VETERAN GOALS – LFUCG
12. PRE-BID CONFERENCE

PART 1

ADVERTISEMENT FOR BIDS

1. INVITATION

Sealed proposals for the **Town Branch WWTP Primary Effluent Pump Station MCC Replacement** project will be received by the Lexington-Fayette Urban County Government (LFUCG) via Ion Wave until 2:00 p.m., local time, **April 4, 2025** for furnishing all labor and/or materials and performing all work as set forth by this advertisement, Ion Wave Q&A, conditions (general and special), specifications, and/or the drawings prepared by GRW Engineers for Lexington-Fayette Urban County Government. Immediately following the scheduled closing time for reception of bids, all proposals which have been submitted in accordance with the above will be opened electronically and a bid tab sheet will be available via Ion Wave.

LFUCG will only be accepting bids on-line through Ion Wave for this solicitation. Base bid and alternate totals (if required) should be provided on the appropriate line items tab on Ion Wave. Submissions without line item totals (if required) may be rejected and deemed non-responsive. All forms normally provided with bid submission should be downloaded from Ion Wave, filled out and attached with bid submission. A copy of bid bond must be included with submission. THESE INSTRUCTIONS SUPERCEDE ALL OTHER BID SUBMISSION INSTRUCTIONS PROVIDED IN THIS PACKAGE. PLEASE SUBMIT ALL QUESTIONS VIA THE Q&A MODULE ON ION WAVE.

2. DESCRIPTION OF WORK

Consisting of the construction and/or furnishing of items as listed in the Bid Schedule beginning on page P-6, Part III, Form of Proposal, of this document, for the **Town Branch Primary Effluent Pump Station MCC Replacement**, Lexington-Fayette County, Kentucky.

Specs and drawings are available on Ion Wave only.

3. OBTAINING PLANS, SPECIFICATIONS, AND BID DOCUMENTS

Plans, Specifications, and Contract Documents shall be obtained from Ion Wave (LFUCG's electronic bidding system). Ion Wave can be accessed at <https://lexingtonky.ionwave.net>

4. METHOD OF RECEIVING BIDS

Bids will be received from Prime Contracting firms on a **Lump Sum** for total Project. Bidder must include a price for all bid items to be considered. Bids shall be submitted in the manner and subject to the conditions as set forth and described in the Information for Bidders and Special Conditions.

Bids/proposals should be submitted online via Ion Wave.

5. METHOD OF AWARD

The Contract, if awarded, will be to the lowest responsive and responsible bidder for the total project whose qualifications indicate the award will be in the best interest of the OWNER and whose bid/proposal complies with all the prescribed requirements. No Notice of Award will be given until the OWNER has concluded such investigation as deemed necessary to establish the responsibility, qualifications and financial ability of Bidders to do the work in accordance with the Contract Documents to the satisfaction of the OWNER within the time prescribed. The OWNER reserves the right to reject the Bid of any Bidder who does not pass such investigation to the OWNER's satisfaction. The OWNER reserves the right to reject the Bid of any Bidder that is deemed to be unbalanced or front loaded. In analyzing Bids, the OWNER may take into consideration alternate and unit prices, if requested by the Bid forms.

6. BID WITHDRAWAL

No bidder may withdraw his bid for a period of ninety (90) calendar days after the closing date for receipt of bids. Errors and omissions will not be cause for withdrawal of bid without forfeit of bid bond.

7. BID SECURITY

If the bid is \$50,000 or greater, bid shall be accompanied by a certified check or bid bond payable to the Lexington-Fayette Urban County Government in an amount not less than Five Percent (5%) of the base bid. Bid bond shall be executed by a Surety Company authorized to do business in the Commonwealth of Kentucky and countersigned by a licensed Kentucky Resident Agent, representing the Surety Company. Bid Bonds are not required for bids under \$50,000. A cashier's check or irrevocable letter of credit is an acceptable form of bid security.

8. SUBMISSION OF BIDS

CONTRACTORS shall submit their bids via Ion Wave not later than 2:00 p.m. local time, April 4, 2025. Bids will remain sealed until April 4, 2025, 2:00 pm, the official Bid closure time. Bids will not be received after the scheduled closing time for receipt of bids. Bid tab sheet will be immediately available after bid opening, under the Documents link on Ion Wave.

9. RIGHT TO REJECT

The Lexington-Fayette Urban County Government reserves the right to reject any and all bids and to waive all informalities and/or technicalities where the best interest of the Lexington-Fayette Urban County Government may be served.

10. NOTIFICATION TO THE LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT FOR AFFIRMATIVE ACTION PLAN AND CURRENT WORKFORCE

The successful bidder must submit the following to the Lexington-Fayette Urban County Government:

1. Affirmative Action Plan for his/her firm.
2. Current Workforce Analysis Form

Failure to submit this as required herein may result in disqualification of the Bidder from the award of the contract.

11. NOTICE CONCERNING MWDBE and VETERAN OWNED SMALL BUSINESS GOALS

The Lexington-Fayette Urban County Government has a Certified Minority and Women Business Enterprise seventeen percent (17%) minimum goal including minimum subgoals of five percent (5%) for Minority Business Enterprises (MBE) and a subgoal of twelve percent (12%) for Women Business Enterprises (WBE); a three (3%) minimum goal for Certified Veteran-Owned Small Businesses and/or Certified Service- Disabled Veteran Owned Businesses; and a goal of utilizing Disadvantaged Business Enterprises (DBE), where applicable, for government contracts.

For assistance in locating certified DBEs, MBEs, WBEs, VOSBs and/or VOSBs, contact Sherita Miller at 859/258-3320 or by writing the address listed below:

Sherita Miller, MPA, CPSD
Minority Business Enterprise Liaison
Division of Procurement
Lexington-Fayette Urban County Government
200 East Main Street
Lexington, Kentucky 40507
smiller@lexingtonky.gov

12. PRE-BID CONFERENCE

There will not be a Pre-Bid Conference for this project.

END OF SECTION

PART II
INFORMATION FOR BIDDERS

INDEX

1. RECEIPT AND OPENING OF BIDS
2. PREPARATION OF BID
3. SUBCONTRACTS
4. QUALIFICATION OF BIDDER
5. BID SECURITY
6. LIQUIDATED DAMAGES FOR FAILURE TO ENTER INTO CONTRACT
7. TIME OF COMPLETION AND LIQUIDATED DAMAGES
8. EXAMINATION OF CONTRACT DOCUMENTS AND SITE
9. ADDENDA AND INTERPRETATIONS
10. SECURITY FOR FAITHFUL PERFORMANCE
11. POWER OF ATTORNEY
12. TAXES AND WORKMEN'S COMPENSATION
13. LAWS AND REGULATIONS
14. EROSION AND SEDIMENT CONTROL AND PERMITS
15. PREVAILING WAGE LAW AND MINIMUM HOURLY RATES
16. AFFIRMATIVE ACTION PLAN
17. CONTRACT TIME
18. SUBSTITUTION OR "OR-EQUAL" ITEMS
19. ALTERNATE BIDS
20. SIGNING OF AGREEMENT
21. ASSISTANCE TO BE OFFERED TO DBE CONTRACTORS
22. LFUCG NON-APPROPRIATION CLAUSE
23. NOTICE OF CONTENTION

PART II
INFORMATION FOR BIDDERS

1. RECEIPT AND OPENING OF BIDS

The Lexington-Fayette Urban County Government (herein called the OWNER) invites bids from firms on the project described in the Advertisement for Bids. The OWNER will receive bids via Ion Wave, at the time and in the manner set forth in the Advertisement for Bids, and the Bids. The OWNER may consider informal any bid not prepared and submitted in accordance with the provisions hereof and may waive any informalities or reject any and all bids. Any bid may be withdrawn prior to the scheduled time for the opening of bids or authorized postponement thereof. Any bid received after the time and date specified shall not be considered. No bidder may withdraw a bid within 90 days after the actual time and date of the bid opening, but OWNER may, in its sole discretion, release any bid and return the Bid Security prior to that date.

The Lexington-Fayette Urban County Government assumes no responsibility for bids that are not delivered as indicated above.

2. PREPARATION OF BID

All sections of the bid package requiring Contractor information must be filled in and uploaded in the Response Attachments tab in IonWave. Bid bonds must be uploaded also. All pricing must be submitted in the Line Items tab in IonWave.

3. SUBCONTRACTS

The bidder is specifically advised that any person, firm, or other party to whom it is proposed to award a subcontract under this Contract must be acceptable to the OWNER. All proposed subcontractors must be identified on the Form of Proposal. Prior to the award of Contract, the OWNER or the OWNER'S representative will advise the CONTRACTOR of the acceptance and approval thereof or of any action necessary to be taken. Should any Subcontractor be rejected by the OWNER, the CONTRACTOR shall present a new name and/or firm to the OWNER at no change in the Contract Price.

4. QUALIFICATION OF BIDDER

The OWNER may make such investigations as the OWNER deems necessary to determine the ability of the bidder to perform the Work, and the bidder shall furnish to the OWNER all such information and data for this purpose as the OWNER may request. The OWNER reserves the right to reject any bid if the evidence submitted by, or investigation of, such bidder fails to satisfy the OWNER that such bidder is properly qualified to carry out the obligations of the Contract and to complete the Work contemplated therein. Conditional bids will not be accepted.

In evaluating Bids, OWNER shall consider the qualifications of the BIDDERS, whether or not the Bids comply with the prescribed requirements, and alternatives and unit prices, as requested. OWNER may consider maintenance requirements, performance data, and disruption or damage to private property. It is OWNER'S intent to accept alternatives by the bid forms, in the order in which they are listed in the Bid Form but OWNER may accept or decline them in order or combination. The contract, if awarded, will be awarded to the lowest responsive and qualified, responsible BIDDER based upon OWNER'S evaluation which indicates that the award will be in the best interest of OWNER and the general public.

In the event there is any question as to the bidder's qualifications and ability to complete the work, a final determination will be made in accordance with a fair evaluation by the Urban County Government of the above listed elements.

- A. If the OWNER requires filling out a detailed financial statement, the bidder may provide its current certified financial statement(s) for the required time interval.
- B. Corporate firms are required to be registered with the Office of the Secretary of State, Commonwealth of Kentucky.
- C. Documents Required of CONTRACTOR - (1) A sworn statement signed by the President or owner of the Company regarding all current work in progress anywhere; (2) A document showing the percent of completion of each project and the total worth of each project; and (3) Documentation showing the percentage of the DBE employment levels on each project of the Bidder's current work force, and DBE participation levels for Subcontractors.
- D. Optional OWNER Requirements - The OWNER, at its discretion, may require the BIDDER/CONTRACTOR to provide: (1) A current detailed financial statement for a period including up to 3 prior years. (2) Financial security or insurance in amounts and kinds acceptable to the OWNER to meet the financial responsibility requirements for the CONTRACTOR to indemnify the OWNER. (3) Additional information and/or DBE work force data, as well as DBE participation data.

Each bidder agrees to waive any claim it has or may have against the Owner and their respective employees, arising out of or in connection with the administration, evaluation, or recommendation of any bid.

5. BID SECURITY

- A. Each bid must be accompanied by a bid bond prepared on a Form of Bid Bond and attached hereto, duly executed by the bidder as principal and having as surety thereon a surety company approved by the OWNER, in the amount of 5% of the bid. Such bid bond will be returned to the unsuccessful bidder(s) only upon written request to the Director of Procurement within seven (7) days of opening of bids. Bid bond shall be made payable to the Lexington-Fayette Urban County Government. Bid security is not required for projects under \$50,000.
- B. Bonds shall be placed with an agent licensed in Kentucky with surety authorized to do business within the state. When the premium is paid for such coverage, the full commission payable shall be paid to such local agent who shall not divide such commission with any person other than a duly licensed resident local agent.

6. LIQUIDATED DAMAGES FOR FAILURE TO ENTER INTO CONTRACT

The successful bidder, upon his failure or refusal to execute and deliver the Contract and bonds required within ten (10) days after he has received notice of the acceptance of his bid, shall forfeit to the OWNER, as liquidated damages for such failure or refusal, the security deposited with his bid.

7. TIME OF COMPLETION AND LIQUIDATED DAMAGES

Bidder must agree to commence work on or before a date to be specified in a written "Notice to Proceed" from the OWNER and to fully complete the Project within the time as specified in the Contract. Bidder must agree also to pay **\$250.00** per day thereafter deadline for substantial and final completion.

8. EXAMINATION OF CONTRACT DOCUMENTS AND SITE

- A. It is the responsibility of each Bidder before submitting a Bid, to (a) examine the Contract Documents thoroughly, (b) visit the site(s) to become familiar with local conditions that may affect cost, progress, performance or furnishing of the work, (c) consider Federal, State and Local laws and regulations that may affect cost, progress, performance or furnishing of the work, (d) study and carefully correlate Bidder's observations with the Contract Documents, and (e) notify Owner of all conflicts, errors or discrepancies in the Contract Documents.
- B. Bidders should examine the requirements of Section 4 of the General Conditions for information pertaining to subsurface conditions, underground structures, underground facilities, and availability of lands, easements, and rights-of-way. The completeness of data, presented in the Contract Documents, pertaining to subsurface conditions, underground structures, and underground facilities for the purposes of bidding or construction is not assured. The Bidder will, at Bidder's

own expense, make or obtain any additional examinations, investigations, explorations, tests and studies and obtain any additional information and data which pertain to the physical conditions (surface and subsurface) which may affect cost, progress, performance or furnishing of the Work and which Bidder deems necessary to determine its Bid for performing and furnishing the Work in accordance with the time, price, and other terms and conditions of the Contract Documents. On request in advance, OWNER will provide access to the site to conduct such explorations and tests as each Bidder deems necessary for submission of a bid. Bidder shall fill all holes, clean up and restore the site to its former condition upon completion of such explorations.

- C. The submission of a Bid will constitute an incontrovertible representation by the Bidder that Bidder has complied with every requirement of this paragraph; that without exception the Bid is premised upon furnishing and performing the Work required by the Contract Documents and such means, methods, techniques, sequences or procedures of construction as may be indicated in or required by the Contract Documents; and that the Contract Documents are sufficient in scope and detail to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

9. ADDENDA AND INTERPRETATIONS

No interpretation of the meaning of the Contract Documents will be made to any bidder orally. Every request for such interpretation should be in writing addressed to the Director of Procurement, who in turn will have an addendum issued under signature of the Project Manager for the Lexington-Fayette Urban County Government, and to be given consideration must be received at least seven (7) days prior to the date fixed for the opening of bids. Any and all such interpretations and any supplemental instructions will be in the form of written addenda to the specifications which, if issued, will be mailed by certified mail with return receipt requested, faxed or emailed to all prospective bidders. Failure of any bidder to receive any such addendum or interpretation shall not relieve such bidder from any obligation under his bid as submitted. All addenda so issued shall become part of the Contract Documents.

10. SECURITY FOR FAITHFUL PERFORMANCE

- A. Simultaneously with his delivery of the executed Contracts, the CONTRACTOR shall furnish a surety bond or bonds as security for the faithful performance of this Contract and for payment of all persons performing labor on the Project under this Contract and furnishing materials in connection with this Contract, as specified in the General Conditions. The surety on such bond or bonds shall be a duly authorized surety company satisfactory to the OWNER and authorized to do business in the Commonwealth of Kentucky.

- B. All bonds required by this Contract and laws of this State shall be placed with agents licensed in the State of Kentucky. When the premium is paid for such coverages, the full commission shall be paid to such local agent who shall not divide such commission with any person other than a duly licensed resident local agent.
- C. **Contractor shall use standard Performance and Payment Bond forms such as documents provided with this contract book or AIA form A312-1984 (or later).**

11. POWER OF ATTORNEY

Attorney-in-fact who signs bid bonds or contract bonds must file with each bond a certified and effectively dated copy of their power of attorney.

12. TAXES AND WORKMEN'S COMPENSATION

The CONTRACTOR and subcontractor will be required to accept liability for payment of all payroll taxes, sales and use tax, and all other taxes or deductions required by local, state or federal law. Each shall carry Workmen's Compensation Insurance to the full amounts as required by Statutes and shall include the cost of all foregoing items in the proposal. The CONTRACTOR will not otherwise be reimbursed or compensated for such tax payments. The CONTRACTOR is urged to ascertain at his own risk his actual tax liability in connection with the execution or performance of his Contract.

13. LAWS AND REGULATIONS

The bidder's attention is directed to the fact that all applicable state laws, municipal ordinances, and the rules and regulations of all authorities having jurisdiction over construction of the Project shall apply to the Contract throughout, and they will be deemed to be included in the contract, the same as though herein written out in full.

14. EROSION AND SEDIMENT CONTROL AND PERMITS

The CONTRACTOR and Subcontractors performing work on projects on behalf of the OWNER shall also comply with all applicable federal, state, and local environmental regulations and all requirements and conditions set forth in "special" permits including but not limited to Corp of Engineers 404 permits, 401 Water Quality Certifications, Stream Crossing and Floodplain Encroachment Permits as described in Part 4 General Conditions Paragraph 5.17.

15. PREVAILING WAGE LAW AND MINIMUM HOURLY RATES

Federal wage rates and regulations, if required for this Project, will be as described in the Special Conditions.

16. AFFIRMATIVE ACTION PLAN

The successful Bidder must submit the entire proposal with their bid, the following items to the Urban County Government:

1. Certification of Bid Proposal/DBE – see Part III
2. LFUCG MWDBE Participation Form – see Part III
3. Documentation Required for Good Faith Efforts and Outreach Plans – see Part III

A Work Force Analysis Form shall be submitted for each Contract. Failure to submit any of these items as required herein may result in disqualification of the Bidder from award of the Contract.

17. CONTRACT TIME

The number of calendar days within which the Work is to be substantially completed and ready for final payment (the Contract Time) is set forth in the Contract Agreement.

18. SUBSTITUTE OR "APPROVED EQUAL" ITEMS

The Contract, if awarded, will be on the basis of materials and equipment described in the Drawings or specified in the Specifications without consideration of possible substitute or "approved equal" items. Whenever it is indicated in the Drawings or specified in the Specifications that a substitute or "approved equal" item of material or equipment may be furnished or used by the CONTRACTOR if acceptable to the OWNER, application for such acceptance will not be considered by the OWNER until after the effective date of the Agreement. The procedure for submission of any such application by the CONTRACTOR and consideration by the OWNER is set forth in the General Conditions.

19. ALTERNATE BIDS

Bidders shall submit alternate bids/proposals only if and when such alternate bids/proposals have been specifically requested in an Invitation for Bids. If alternate bids/proposals are requested in an Invitation for Bids, the form of submission of such alternate bid and the conditions under which such alternate bids will be considered for award of a contract will be established in the Invitation.

Any Bidder who submits a bid incorporating an alternate proposal when alternate bids/proposals have not been requested in the Invitation for Bids shall have his/her bid rejected as non-responsive.

Any Bidder who submits a bid incorporating two (2) or more prices for an item or groups of items (unless such method of pricing is requested in the Invitation for Bids), or which imposes conditions for acceptance other than those established in the Invitation for Bids, shall have their bid rejected as non-responsive.

20. SIGNING OF AGREEMENT

When OWNER gives a Notice of Award to the successful Bidder, it will be accompanied by the required number of unsigned counterparts of the Agreement with all other written Contract Documents attached. Within ten days thereafter, CONTRACTOR shall sign and deliver the required number of counterparts of the Agreement and attached documents to OWNER with the required Bonds, Certificate of Insurance, and Power of Attorney. The OWNER will deliver one fully signed counterpart to CONTRACTOR at such time as it has been signed by the Mayor.

21. ASSISTANCE TO BE OFFERED TO DISADVANTAGED BUSINESS ENTERPRISE (MWDBE) CONTRACTORS AND VETERAN OWNED SMALL BUSINESSES

A. Outreach for MWDBE(s) and Veteran Owned Small Businesses (VOSB)

The Lexington-Fayette Urban County Government (LFUCG) maintains a database of MWDBE contractors and Veteran Owned Small Businesses. When a LFUCG construction project is advertised for bidding, notices are sent to companies registered at <https://lexingtonky.ionwave.net>. The notices describe the project and indicate the deadline for submitting bids.

If you wish to be added to the LFUCG MWDBE and Veteran contractor database, please contact:

Sherita Miller, MPA, CPSD
Minority Business Enterprise Liaison
Division of Procurement
Lexington-Fayette Urban County Government
200 East Main Street, Room 338
Lexington, Kentucky 40507
smiller@lexingtonky.gov

B. Bid Bond Assistance for MWDBE(s)

For those MWDBE contractors who wish to bid on LFUCG project, bid bond assistance is available. This bid bond assistance is in the form of a “Letter of Certification” which is accepted by the LFUCG’s Division of Purchasing, in lieu of a bid bond. The “Letter of Certification” must be included in the bid package when it is submitted to the Division of Purchasing. The “Letter of Certification” will reference the specific project for which the bid is being submitted, and the time and date on which the bid is due. Bid bond assistance must be requested from the Lexington-Fayette Urban County Government’s Division of Procurement.

C. Eligibility for Bid Bond Assistance for MWDBE(s)

In order to be eligible for any Bid bonding assistance, a MWDBE construction company must be owned or controlled at the level of 51% or more by a member or members of a minority group or females. Prior to receiving assistance, a statement providing evidence of ownership and control of the company by a member or members of a minority group or females must be signed by the Owner or corporate officer and by an attorney or accountant submitted to:

Sherita Miller, MPA, CPSD
Division of Procurement
Lexington-Fayette Urban County Government
200 East Main Street, Room 338
Lexington, Kentucky 40507
smiller@lexingtonky.gov
859-258-3323

D. MWDBE and VETERAN OWNED SMALL BUSINESSES (VOSB)

The LFUCG will, upon request, assist prime contractors in the procurement of eligible DBE subcontractors in an effort to achieve a seventeen percent (17%) minimum goal including minimum subgoals of five percent (5%) for Minority Business Enterprises (MBE) and a subgoal of twelve percent (12%) for Women Business Enterprises (WBE); a three (3%) minimum goal for Certified Veteran-Owned Small Businesses and/or Certified Service- Disabled Veteran Owned Businesses; and a goal of utilizing Disadvantaged Business Enterprises (DBE), where applicable, for government contracts.

For a list of eligible subcontractors, please contact:

Sherita Miller, MPA, CPSD
Minority Business Enterprise Liaison
Division of Procurement
Lexington-Fayette Urban County Government
200 East Main Street, Room 338
Lexington, Kentucky 40507
smiller@lexingtonky.gov
[859-258-3323](tel:859-258-3323)

22. LFUCG NON-APPROPRIATION CLAUSE

Contractor acknowledges that the LFUCG is a governmental entity, and the contract validity is based upon the availability of public funding under the authority of its statutory mandate.

In the event that public funds are unavailable and not appropriated for the performance of the LFUCG's obligations under this contract, then this contract shall automatically expire without penalty to the LFUCG thirty (30) days after written notice to Contractor of the unavailability and non-appropriation of public funds. It is expressly agreed that the LFUCG shall not activate this non-appropriation provision for its convenience or to circumvent the requirements of this contract, but only as an emergency fiscal measure during a substantial fiscal crisis, which affects generally its governmental operations.

In the event of a change in the LFUCG's statutory authority, mandate and mandated functions, by state and federal legislative or regulatory action, which adversely affects the LFUCG's authority to continue its obligations under this contract, then this contract shall automatically terminate without penalty to the LFUCG upon written notice to Contractor of such limitation or change in the LFUCG's legal authority.

23. NOTICE OF CONTENTION

Vendors who respond to this invitation have the right to file a notice of contention associated with the bid process or to file a notice of appeal of the recommendation made by the Director of Procurement resulting from this invitation.

Notice of contention with the bid process must be filed within 3 business days of the bid/proposal opening by (1) sending a written notice, including sufficient documentation to support contention, to the Director of the Division of Procurement or (2) submitting a written request for a meeting with the Director of Procurement to explain his/her contention with the bid process. After consulting with the Commissioner of Finance the Chief Administrative Officer and reviewing the documentation and/or hearing the vendor, the Director of Procurement shall promptly respond in writing findings as to the compliance with bid processes. If, based on this review, a bid process irregularity is deemed to have occurred the Director of Procurement will consult with the Commissioner of Finance, the Chief Administrative Officer and the Department of Law as to the appropriate remedy.

Notice of appeal of a bid recommendation must be filed within 3 business days of the bid recommendation by (1) sending a written notice, including sufficient documentation to support appeal, to the Director, Division of Procurement or (2) submitting a written request for a meeting with the Director of Procurement to explain the appeal. After reviewing the documentation and/or hearing the vendor and consulting with the Commissioner of Finance and the Chief Administrative Officer, the Director of Procurement shall in writing, affirm or withdraw the recommendation.

END OF SECTION

PART III

FORM OF PROPOSAL

INDEX

1.	FORM OF PROPOSAL	P-2
2.	LEGAL STATUS OF BIDDER.....	P-4
3	BIDDERS AFFIDAVIT	P-5
4.	BID SCHEDULE – SCHEDULE OF VALUES	P-6
5.	STATEMENT OF BIDDER'S QUALIFICATIONS	P-10
6.	LIST OF PROPOSED SUBCONTRACTORS	P-14
7.	LEXINGTON FAYETTE URBAN COUNTY GOVERNMENT MWDBE PARTICIPATION GOALS, FORMS, AND GOOD FAITH EFFORTS	P-16
8.	AUTHENTICATION OF BID AND STATEMENT OF NON-COLLUSION AND NON-CONFLICT OF INTEREST.....	P-29
9.	STATEMENT OF EXPERIENCE.....	P-30
10.	EQUAL OPPORTUNITY AGREEMENT.....	P-32
11.	EQUAL EMPLOYMENT OPPORTUNITY AFFIRMATIVE ACTION POLICY	P-36
12.	WORKFORCE ANALYSIS	P-37
13.	EVIDENCE OF INSURABILITY	P-38
14.	DEBARRED FIRMS.....	P-39
15.	DEBARRED CERTIFICATION	P-40

PART III

Invitation to Bid No. XXX-2025

Primary Effluent Motor Control Center Replacement

1. FORM OF PROPOSAL

Place: Lexington, Kentucky

Date: 04/02/2025

The following Form of Proposal shall be followed exactly in submitting a proposal for this Work.

This Proposal Submitted by Aequitas Power Company
401 4th St PO Box 1407 Shelbyville KY 40065
(Name and Address of Bidding Contractor)

(Hereinafter called "Bidder"), organized and existing under the laws of the State of Kentucky, doing business as Aequitas Power Company
"a corporation," "a partnership", or an "individual" as applicable.

To: Lexington-Fayette Urban County Government
(Hereinafter called "OWNER")
Office of the Director of Purchasing
200 East Main Street, 3rd Floor
Lexington, KY 40507

4/02/2025

Gentlemen:

The Bidder, in compliance with your Invitation for Bids for the Town Branch Primary Effluent Pump Station MCC Replacement having examined the Plans and Specifications with related documents, having examined the site for proposed Work, and being familiar with all of the conditions surrounding the construction of the proposed Project, including the availability of materials and labor, hereby proposes to furnish all labor, materials, and supplies, and to construct the Project in accordance with the Contract Documents, within the time set forth therein, and at the lump sum and/or unit prices stated hereinafter. These prices are to cover all expenses incurred in performing the Work required under the Contract Documents, of which this proposal is a part.

The Bidder hereby acknowledges receipt of the following addenda:

Addendum No. 1 Date 3/27/2025

Addendum No. Date

Addendum No. Date

Addendum No. Date

Addendum No. Date

Addendum No. Date

Addendum No. Date

Addendum No. Date

Insert above the number and the date of any Addendum issued and received. If none has been issued and received, the word "NONE" should be inserted.

2. LEGAL STATUS OF BIDDER

Bidder Aequitas Power Company

Date 4/02/2025

- * 1. A corporation duly organized and doing business under the laws of the State of Kentucky _____, for whom Aequitas Power Company _____, bearing the official title of _____ Managing Director _____, whose signature is affixed to this Bid/Proposal, is duly authorized to execute contracts.

- * 2. ~~A Partnership, all of the members of which, with addresses are: (Designate general partners as such)~~

* 3. ~~An individual, whose signature is affixed to this Bid/Proposal (please print name)~~
~~Jorge Diaz~~

(The Bidder shall fill out the appropriate form and strike out the other two.)

3.

BIDDERS AFFIDAVIT

Comes the Affiant, Aequitas Power Company, and after being first duly sworn, states under penalty of perjury as follows:

1. His/her name is Jorge Diaz and he/she is the individual submitting the bid or is the authorized representative of Aequitas Power Company the entity submitting the bid (hereinafter referred to as "Bidder").
2. Bidder will pay all taxes and fees, which are owed to the Lexington-Fayette Urban County Government at the time the bid is submitted, prior to award of the contract and will maintain a "current" status in regard to those taxes and fees during the life of the contract.
3. Bidder will obtain a Lexington-Fayette Urban County Government business license, if applicable, prior to award of the contract.
4. Bidder has authorized the Division of Procurement to verify the above-mentioned information with the Division of Revenue and to disclose to the Urban County Council that taxes and/or fees are delinquent or that a business license has not been obtained.
5. Bidder has not knowingly violated any provision of Chapter 25 of the Lexington-Fayette Urban County Government Code of Ordinances, known as the "Ethics Act."
6. Bidder acknowledges that "knowingly" for purposes of this Affidavit means, with respect to conduct or to circumstances described by a statute or ordinance defining an offense, that a person is aware or should have been aware that his conduct is of that nature or that the circumstance exists.

Jorge Diaz
Signature

Jorge Diaz
Printed Name

Managing Director
Title

04/02/2025
Date

Company Name Aequitas Power Company

Address 401 4th St PO Box 1407 Shelbyville KY 40065

Subscribed and sworn to before me by Jorge Diaz
(Affiant)

Managing Director
(Title)

of Aequitas Power Company this 2nd day of April, 2025.
(Company Name)

Juan Flynn
Notary Public
[seal of notary]

My commission expires: 10/21/2026



4. BID SCHEDULE – SCHEDULE OF VALUES

The Bidder agrees to perform all the Work described in the Specifications and shown on the Plans for the following proposed lump sum and/or unit prices, if applicable, which shall include the furnishing of all labor, materials, supplies, equipment and/or vehicle usage, services, all items of cost, overhead, taxes (federal, state, local), and profit for the Contractor and any Subcontractor involved, within the time set forth herein. If unit prices are applicable, Bidder must make the extensions and additions showing the total amount of bid.

Form of proposal must include unit bid prices written in words, unit price written in numbers and total amount bid (unit price x quantity) per line item OR bid may be considered non-responsive. In case of price discrepancy, unit bid price written in words will prevail followed by unit price written in numbers then total amount bid per line item.

If a discrepancy between the unit price and the item total exists, the unit price prevails except: If the unit price is illegible, omitted, or the same as the item total, item total prevails and the unit price is the quotient of the item total and the quantity.

If the unit price and the item total are illegible or are omitted, the bid may be determined nonresponsive. If a lump sum total price is illegible or is omitted, the bid may be determined nonresponsive.

For a unit price based bid, the sum of the item totals is the bid amount the Division uses for bid comparison.

The LFUCG's decision on the bid amount is final.

BASE BID – PRIMARY EFFLUENT MOTOR CONTROL CENTER REPLACEMENT

BIDDING LUMP SUM PRICE TABLE -

Pricing should be submitted in the Line Items tab on IonWave. Pages P-8 must be fully executed and attached to bid submission or bid will be considered non-responsive.

Item No.	Description	Unit	Amount
1.	Bypass Pumping System Allowance	LS	\$18,000
2.	Base Bid Lump Sum Price	LS	438,800
	Total Lump Sum Bid Price (Allowance + Base Bid)	LS	456,800

Submitted by:

Aequitas Power Company

Firm

401 4th St PO Box 1407

Address

Shelbyville

KY

400065

City, State & Zip

***Bid must be signed:
(original signature)***

Jorge Diaz

Signature of Authorized Company Representative – Title

Jorge Diaz

Managing Director

Representative/s Name (Typed or Printed)

502- 257-3618

Area Code – Phone –Fax #

jorge.diaz@aequitaspower.com

E-Mail Address

OFFICIAL ADDRESS:

153 Plantation Drive

Shelbyville, KY 40065

(Seal if Bid is by Corporation)

By signing this form you agree to ALL terms, conditions, and associated forms in this bid package

5. **STATEMENT OF BIDDER'S QUALIFICATIONS**

The following statement of the Bidder's qualifications is required to be filled in, executed, and submitted with the Proposal:

1. Name of Bidder: Aequitas Power Company
2. Permanent Place of Business: 153 Plantation Dr Shelbyville KY 40065
3. When Organized: 08/22/2022
4. Where Incorporated: Kentucky
5. Construction Plant and Equipment Available for this Project:
Wire Pullers
Service Trucks
Electricians tools
Bucket Trucks, Digger Derrick

(Attach Separate Sheet If Necessary)

6. Financial Condition:

If specifically requested by the OWNER, the apparent low Bidder is required to submit its latest three (3) years audited financial statements to the OWNER'S Division of Procurement within seven (7) calendar days following the bid opening.

7. In the event the Contract is awarded to the undersigned, surety bonds will be furnished by:

Gray Insurance Company (Surety)

Signed:  (Representative of Surety)

Susan Ritter, Attorney-in-Fact

8. The following is a list of similar projects performed by the Bidder: (Attach separate sheet if necessary).

<u>NAME</u>	<u>LOCATION</u>	<u>CONTRACT SUM</u>
Flex films, MCC panel install	Elizabethtown KY	\$75,000
IMI MCC maintenance	oxford OH	\$17,000
Buffalo Const. Facility new build	Nicholasville KY	\$269,000
JCPS new facility construction	Louisville, KY	\$143,000
Georgia Power, System restoration	Mason, GA	\$480,000

9. The Bidder has now under contract and bonded the following projects:

<u>NAME</u>	<u>LOCATION</u>	<u>CONTRACT SUM</u>
Buffalo Const. Facility new build	Nicholasville KY	\$269,000

10. List Key Bidder Personnel who will work on this Project.

<u>NAME</u>	<u>POSITION DESCRIPTION</u>	<u>NO. OF YEARS WITH BIDDER</u>
Eric Alvey	Area Foreman	2
Joesph Poddam	Foreman	2
Chad Beavers	Foreman	1

11. DBE Participation on current bonded projects under contract:

<u>SUBCONTRACTORS</u> <u>(LIST)</u>	<u>PROJECT</u> <u>(SPECIFIC TYPE)</u>	<u>DBE</u>	<u>% of WORK</u>

(USE ADDITIONAL SHEETS IF NECESSARY)

12. We acknowledge that, if we are the apparent low Bidder, we will submit to the OWNER within 7 calendar days following the Bid Opening, a sworn statement on the OWNER'S form regarding all current work on hand and under contract, and a statement on the OWNER'S form of the experience of our officers, office management and field management personnel. Additionally, if requested by the OWNER, we will within 7 days following the request submit audited financial statements and loss history for insurance claims for the 3 most recent years (or a lesser period stipulated by the OWNER)—all in accordance with the Bid Documents.

Respectfully submitted:

Aequitas Power Company

(Name of Contracting Firm)

BY: Jorge Diaz

TITLE: Jorge Diaz | Managing Director

DATE 04/02/2025

6. **LIST OF PROPOSED SUBCONTRACTORS**

The following list of proposed subcontractors is required by the OWNER to be executed, completed and submitted with the BIDDER'S FORM OF PROPOSAL. All subcontractors are subject to approval of the Lexington-Fayette Urban County Government. Failure to submit this list completely filled out may be cause for rejection of bid.

<u>BRANCH OF WORK-LIST</u>	<u>DBE</u> <u>Work</u>	<u>% of EACH MAJOR ITEM</u>
N/A		

Aequitas Power Company

04/02/2025



Finance Director

LIST OF MATERIALS/ SUPPLIERS

Bidders are hereby advised that this list must be complete and submitted with the Bid.

Listing "as per plans and specifications", will not be considered as sufficient identification. Where more than one "Make or Brand" is listed for any one item, the Owner has the right to select the one to be used.

Item	Brand Name, Manufacturer and/or Supplier
Winlectric	GE, ABB, Cuttler Hammer
Rexel	Lithonia, GE, Sqaure D
Ekar	Sqaure D, Eaton

7.



LEXINGTON

MINORITY BUSINESS ENTERPRISE PROGRAM

Sherita Miller, MPA, CPSD
Minority Business Enterprise Liaison
Division of Procurement
Lexington-Fayette Urban County Government
200 East Main Street
Lexington, KY 40507
smiller@lexingtonky.gov
859-258-3323

OUR MISSION: The mission of the Minority Business Enterprise Program (MBEP) is to facilitate the full participation of minority and women owned businesses in the procurement process and to promote economic inclusion as a business imperative essential to the long-term economic viability of Lexington-Fayette Urban County Government.

To that end the urban county council adopted and implemented Resolution 272-2024 – a Certified Minority and Women Business Enterprise seventeen percent (17%) minimum goal including minimum subgoals of five percent (5%) for Minority Business Enterprises (MBE) and a subgoal of twelve percent (12%) for Women Business Enterprises (WBE); a three (3%) minimum goal for Certified Veteran-Owned Small Businesses and/or Certified Service- Disabled Veteran Owned Businesses; and a goal of utilizing Disadvantaged Business Enterprises (DBE), where applicable, for government contracts.

The resolution states the following definitions shall be used for the purposes of reaching these goals:

Certified Disadvantaged Business Enterprise (DBE) – a business in which at least fifty-one percent (51%) is owned, managed and controlled by a person(s) who is socially and economically disadvantaged as define by 49 CFR subpart 26.

Certified Minority Business Enterprise (MBE) – a business in which at least fifty-one percent (51%) is owned, managed and controlled by an ethnic minority (i.e. Black American, Asian American, Hispanic American, Native American)

Certified Women Business Enterprise (WBE) – a business in which at least fifty-one percent (51%) is owned, managed and controlled by a woman.

Certified Veteran-Owned Small Business (VOSB) – a business in which at least fifty-one percent (51%) is owned, managed and controlled by a veteran who served on active duty with the U.S. Army, Air Force, Navy, Marines or Coast Guard.

Certified Service -Disabled Veteran Owned Small Business (SDVOSB) – a business in which at least fifty-one percent (51%) is owned, managed and controlled by a disabled veteran who served on active duty with the U.S. Army, Air Force, Navy, Marines or Coast Guard.

The term "Certified" shall mean the business is appropriately certified, licensed, verified, or validated by an organization or entity recognized by the Division of Procurement as having the appropriate credentials to make a determination as to the status of the business.

The following certifications are recognized and accepted by the MBEP:

401 4th St PO Box 1407 Shelbyville KY 40065

Kentucky Transportation Cabinet (KYTC), Disadvantaged Business Enterprise (DBE)

Kentucky Minority and Women Business Enterprise (MWBE)

Women's Business Enterprise National Council (WBENC)

National Women Business Owners Corporation (NWBOC)

National Minority Supplier Development Council (NMSDC)

Tri-State Minority Supplier Development Council (TSMSSDC)

U.S. Small Business Administration Veteran Small Business Certification (VetCert)

Kentucky Service- Disabled Veteran Owned Small Business (SDVOSB)

To comply with Resolution 272-2024, prime contractors, minority and women business enterprises, veteran owned small businesses, and service-disabled veteran owned small businesses must complete monthly contract compliance audits in the Diverse Business Management Compliance system, <https://lexingtonky.diversitycompliance.com/>

A list of organizations that certify and/or maintain lists of certified businesses (i.e. DBE, MBE, WBE, VOSB and/or SDVOSB) is available upon request by emailing, Sherita Miller, smiller@lexingtonky.gov.



Aequitas Power Company
LFUCG MWDBE PARTICIPATION FORM
Bid/RFP/Quote Reference # 42-2025

41

The MWDBE and/or veteran subcontractors listed have agreed to participate on this Bid/RFP/Quote. If any substitution is made or the total value of the work is changed prior to or after the job is in progress, it is understood that those substitutions must be submitted to the Division of Procurement for approval immediately. **Failure to submit a completed form may cause rejection of the bid.**

MWBE Company, Name, Address, Phone, Email	DBE/MBE WBE/VOSB/SDVOSB	Work to be Performed	Total Dollar Value of the Work	% Value of Total Contract
1. Aequitas Power Company 401 4th St PO Box 1407 Shelbyville KY 40065	MBE, DBE	Electrical	535,580	100
2.				
3.				
4.				

The undersigned company representative submits the above list of MDWBE and veteran firms to be used in accomplishing the work contained in this Bid/RFP/Quote. Any misrepresentation may result in the termination of the contract and/or be subject to applicable Federal and State laws concerning false statements and false claims.

Aequitas Power Company

Company

04/02/2025

Date

Jorge Diaz

Company Representative

Managing Director

Title



LEXINGTON

LFUCG MWDBE SUBSTITUTION FORM

Bid/RFP/Quote Reference # 42-2025

The substituted MWDBE and/or veteran subcontractors listed below have agreed to participate on this Bid/RFP/Quote. These substitutions were made prior to or after the job was in progress. These substitutions were made for reasons stated below and are now being submitted to the Division of Procurement for approval. By the authorized signature of a representative of our company, we understand that this information will be entered into our file for this project. **Note: Form required if a subcontractor is being substituted on a contract.**

SUBSTITUTED DBE/MBE/WBE/VOSB Company Name, Address, Phone, Email	DBE/MBE/WBE/VOSB/SDVOSB Formally Contracted/ Name, Address, Phone, Email	Work to Be Performed	Reason for the Substitution	Total Dollar Value of the Work	% Value of Total Contract
1.					
2.					
3.					
4.					

The undersigned acknowledges that any misrepresentation may result in termination of the contract and/or be subject to applicable Federal and State laws concerning false statements and false claims.

Aequitas Power Company, LLC
Company

04/02/2025
Date

Jorge Diaz
Company Representative
Jorge Diaz | Managing Director
Title



LEXINGTON

DOCUMENTATION REQUIRED FOR GOOD FAITH EFFORTS AND OUTREACH PLANS

As affirmed in Resolution Number 272-2024, the Urban County Council has adopted an annual aspirational goal of utilizing at least seventeen percent (17%) of public funds spend from certain discretionary agreements with certified Minority Business Enterprises (MBEs) and certified Woman Business Enterprises (WBEs); utilizing at least three percent (3%) of public funds from certain discretionary agreements with Certified Veteran-Owned Small Business and Certified Service-Disabled Veteran-Owned Small Businesses (VOSBs); and utilizing Disadvantaged Business Enterprises (DBEs) where applicable. Bidders should make every effort to achieve these goals.

Therefore, as an element of the responsiveness of the bid, all Bidders are required to submit documentation of their good faith and outreach efforts to ensure all businesses, including small and disadvantaged businesses such as minority-, woman-, and veteran-owned businesses, have an equal opportunity to compete for and participate in the performance of any subcontracts resulting from this procurement. Examples of good faith and outreach efforts that satisfy this requirement to encourage the participation of, DBEs, MBEs, WBEs, VOSBs and/or SDVOSBs include:

1. Advertised opportunities to participate in the contract in at least two (2) publications of general circulation media; trade and professional association publications; small and minority business or trade publications; and publications or trades targeting minority, women, and disadvantaged businesses not less than fifteen (15) days prior to the deadline for submission of bids to allow, DBEs, MBEs, WBEs, VOSBs and/or SDVOSBs to participate.
2. Attended LFUCG Procurement Economic Inclusion Outreach event(s) within the past year to meet new small businesses, DBEs, MBEs, WBEs, VOSBs and/or SDVOSBs to partner with on LFUCG contracts and procurements.
3. Attended pre-bid/pre-proposal meetings that were scheduled by LFUCG to inform small businesses, DBEs, MBEs, WBEs, VOSBs and/or SDVOSBs of subcontracting opportunities.
4. Sponsored Economic Inclusion event to provide networking opportunities for prime contractors and small businesses, DBEs, MBEs, WBEs, VOSBs and/or SDVOSBs.
5. Requested a list of certified small, DBE, MBE, WBE, VOSB and/or SDVOSB subcontractors or suppliers from LFUCG and showed evidence of contacting the companies on the list(s).
6. Contacted organizations that work with small, DBE, MBE, WBE, and VOSB companies for assistance in finding certified DBEs, MBEs, WBEs, VOSB and/or SDVOSBs to work on this project. Those contacted and their responses must be a part of the bidder's outreach efforts documentation.
7. Sent written notices, by certified mail, email, or facsimile, to qualified, certified small businesses, DBEs, MBEs, WBEs, VOSBs and/or SDVOSBs soliciting their participation in the contract not less than seven (7) days prior to the deadline for submission of bids to allow them to participate effectively.

8. Followed up initial solicitations by contacting small businesses, DBEs, MBEs, WBEs, VOSBs and/or SDVOSBs via tailored communications to determine their level of interest.
9. Provided the interested small businesses, DBEs, MBEs, WBEs, VOSBs and/or SDVOSBs with adequate and timely information about the plans, specifications, and requirements of the contract.
10. Selected portions of the work to be performed by small businesses, DBEs, MBEs, WBEs, VOSBs and/or SDVOSBs in order to increase the likelihood of subcontracting participation. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate small, DBE, MBE, WBE, VOSB and/or SDVOSB participation, even when the prime contractor may otherwise perform these work items with its own workforce.
11. Negotiated in good faith with interested small businesses, DBEs, MBEs, WBEs, VOSBs and/or SDVOSBs, not rejecting them as unqualified without sound reasons based on a thorough investigation of their capabilities. Any rejection must be so noted in writing with a description as to why an agreement could not be reached.
12. Included documentation of quotations received from interested small businesses, DBEs, MBEs, WBEs, VOSBs and/or SDVOSBs that were not used due to uncompetitive pricing or were rejected as unacceptable and/or copies of responses from firms indicating that they would not be submitting a bid.
 - a. Bidder has to submit sound reasons why the quotations were considered unacceptable. The fact that the bidder has the ability and/or desire to perform the contract work with its own forces will not be considered a sound reason for rejecting a small business', DBE's MBE's, WBE's, VOSB's and/or SDVOSB's quote. Nothing in this provision shall be construed to require the bidder to accept unreasonable quotes in order to satisfy the participation goals.
13. Made an effort to offer assistance to or refer interested small businesses, DBEs, MBEs, WBEs, VOSBs and/or SDVOSBs to obtain the necessary equipment, supplies, materials, insurance and/or bonding to satisfy the work requirements of the bid proposal.
14. Made efforts to expand the search for small businesses, DBEs, MBEs, WBEs, VOSBs and/or SDVOSBs beyond the usual geographic boundaries.
15. Other – any other evidence that the bidder submits that may demonstrate that the bidder has made reasonable efforts to include small, DBE, MBE, WBE, VOSB and/or SDVOSB participation.

Bidder must document, with specificity, each of the efforts it made to include small businesses, DBEs, MBEs, WBEs, VOSBs and/or SDVOSBs as subcontractors in the procurement, including the date on which each effort was made, the medium through which each effort was made, and the outcome of each effort.

Note: Failure to submit the documentation requested in this section may be cause for rejection of bid. Bidders may include any other documentation deemed relevant to this requirement which is subject to review by the MBE Liaison. Documentation of Good Faith and Outreach Efforts must be submitted with the Bid, regardless of the proposed level of small, DBE, MBE, WBE, VOSB and/or SDVOSB participation in the procurement. If the Good Faith and Outreach Effort documentation is not submitted with the bid response, the bid may be rejected.

OUTREACH EFFORTS EVALUATION

Outreach efforts demonstrated by the bidder or respondent will be evaluated on a pass/fail basis.

ATTACHMENT A – SMALL AND DISADVANTAGED, MINORITY-, WOMEN-, AND VETERAN-OWNED BUSINESS OUTREACH PLAN

Proposer Name: _____

Date: _____

Project Name: _____

Project Number: _____

Contact Name: _____

Telephone: _____

Email: _____

The mission of the Minority Business Enterprise Program is to facilitate the full participation of disadvantaged businesses, minority-, women-, veteran-, and service-disabled veteran-owned businesses in the procurement process and to promote economic inclusion as a business imperative essential to the long-term economic viability of Lexington-Fayette Urban County Government.

To that end, small and disadvantaged businesses, including minority-, woman-, veteran-, and service-disabled veteran-owned businesses, must have an equal opportunity to be utilized in the performance of contracts with public funds spent from certain discretionary agreements. By submitting its offer, Bidder/Proposer certifies that it has taken, and if there are further opportunities will take, reasonable steps to ensure that small and disadvantaged businesses, including minority-, woman-, veteran-, and service-disabled veteran-owned businesses, are provided an equal opportunity to compete for and participate in the performance of any subcontracts resulting from this procurement.

The information submitted in response to this clause will not be considered in any scored evaluation. Failure to submit this form may cause the bid or proposal to be rejected.

Is the Bidder/ Proposer a certified firm? Yes ☒ No ☐

If yes, indicate all certification type(s):

DBE ☒

MBE ☒

WBE ☐

SBE ☐

VOSB/SDVOSB
☐

and supply a copy of the certificate and/or certification letter if not currently listed on the city's Minority Business Enterprise Program's (MBEP) certified list.

1. Include a list of firms that Bidder/ Proposer has had a contractual relationship with within the last two years that are minority-owned, woman-owned, veteran-owned or small businesses, regardless of their certification status.

Bluegrass Construction operations

Click or tap here to enter text.

Charles Moore Asphalt

2. Does Bidder/Proposer foresee any subcontracting opportunities for this procurement?

Yes ☐ No ☒

If no, please explain why in the field below. Do not complete the rest of this form and submit this first page with your bid and/or proposal. Click or tap here to enter text. This job is only electrical and we will self the full scope

If yes, please complete the following pages and submit all pages with your bid and/or proposal.

Describe the steps Bidder/Proposer took to solicit small and disadvantaged businesses, including MBEs, WBEs, VOSBs, and SDVOSBs, for subcontracting opportunities for this procurement.

3. Check the good faith and outreach efforts the Bidder/Proposer used to encourage the participation of small and disadvantaged businesses including, MBEs, WBEs, VOSBs and SDVOSBs:

- ☐ ^{N/A} Bidder placed advertisements in search of prospective small businesses, DBEs, MBEs, WBEs, VOSBs and/or SDVOSBs for the solicitation.
- ☐ Bidder attended LFUCG Procurement Economic Inclusion Outreach event(s) within the past year.
- ☐ Bidder attended pre-bid and/or pre-proposal meetings for this solicitation.
- ☐ Bidder sponsored an Economic Inclusion Outreach event.
- ☐ Bidder requested a list of certified small, DBE, MBE, WBE, VOSB and/or SDVOSB subcontractors or suppliers from LFUCG.
- ☐ Bidder contacted organizations that work with small, DBE, MBE, WBE, VOSB and/or SDVOSB companies.
- ☐ Bidder sent written notices to certified small, DBE, MBE, WBE, VOSB and SDVOSB businesses.
- ☐ Bidder followed up to initial solicitations with interested small, DBE, MBE, WBE, VOSB and/or SDVOSB.
- ☐ Bidder provided small, DBE, MBE, WBE, VOSB and/or SDVOSB businesses interested in performing the solicited work with prompt access to the plans, specifications, scope of work, and requirements of the solicitation.
- ☐ Bidder made efforts to segment portions of the work to be performed by small businesses, DBEs, MBEs, WBEs, VOSBs and/or SDVOSBs, including dividing sub-bid/partnership opportunities into economically feasible units/parcels, to facilitate participation.

~~Aequitas Power Company~~
☒ Bidder negotiated in good faith with interested small, DBE, MBE, WBE, VOSB and/or SDVOSB businesses.

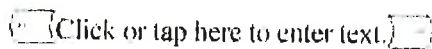
04/02/2025


Finance Director

- ☐ Bidder provided adequate rationale for rejecting any small business', DBEs, MBEs, WBEs, VOSBs or SDVOSBs for lack of qualifications.

- ☐ Bidder offered assistance in obtaining bonding, insurance, financial, equipment, or other resources to small businesses, DBEs, MBEs, WBEs, VOSBs and/or SDVOSBs, in an effort to assist them in meeting project requirements.
- ☐ Bidder made efforts to expand the search for small businesses, DBEs MBEs, WBEs, VOSBs and/or SDVOSBs beyond the usual geographic boundaries.
- ☐ Bidder made other reasonable efforts to include small businesses, DBEs, MBEs, WBEs, VOSBs N/A and/or SDVOSBs participation.

4. Bidder/Proposer must include documentation, including the date each effort was made, the medium through which each effort was made, and the outcome of each effort with this form, regardless of the level of small, DBE, MBE, WBE, VOSB and/or SDVOSB participation. Examples of required documentation include copies of email communications, copies of newspaper advertisements, or copies of quotations received from interested small businesses, DBEs, MBEs, WBEs, VOSBs or SDVOSBs.



For detailed information regarding outreach efforts that satisfy the MBE Program's requirements, please see "Documentation Required for Good Faith Efforts and Outreach Plans" page.

Note: The Bidder/Proposer must be willing to report the identity of each subcontractor and the value of each subcontract to MBEP if awarded a contract from this procurement.

Failure to submit the documentation requested may be cause for rejection of the bid. Bidders may include any other documentation deemed relevant to this requirement, which is subject to review by the MBE Liaison. Documentation of Good Faith and Outreach Efforts must be submitted with the bid, regardless of the proposed level of SBEs, DBEs, MBEs, WBEs, VOSBs and/or SDVOSBs participation in the procurement. If the Good Faith and Outreach Effort Form and associated documentation is not submitted with the bid response, the bid may be rejected.

The undersigned acknowledges that all information is accurate. Any misrepresentations may result in termination of the contract and/or be subject to applicable Federal and State laws concerning false statements and claims.

Aequitas Power Company

Company
 04/02/2025

Date



Company Representative
 Finance Director

Title

8. **AUTHENTICATION OF BID AND STATEMENT OF NON-COLLUSION, NON-
CONFLICT OF INTEREST**

1 3/27/2025

I hereby swear (or affirm) under the penalty for false swearing:

1. That I am the Bidder (if the Bidder is an individual), a partner of the Bidder (if the Bidder is a partnership), or an officer or employee of the bidding corporation having authority to sign on its behalf (if the Bidder is a corporation);
2. That the attached bid has been arrived at by the Bidder independently, and has been submitted without collusion with, and without any agreement, understanding or planned common course of action, with any other contractor, vendor of materials, supplies, equipment or services described in the Invitation to Bid, designed to limit independent bidding or competition;
3. That the contents of the bid or bids have not been communicated by the Bidder or its employees or agents to any person not an employee or agent of the Bidder or its surety on any bond furnished, with the bid or bids, and will not be communicated to any such person, prior to the official opening of the bid or bids;
4. That the Bidder is legally entitled to enter into the contracts with the Lexington-Fayette Urban County Government, and is not in violation of any prohibited conflict of interest;
5. (Applicable to corporation only) That as a foreign corporation, we are registered with the Secretary of State, Commonwealth of Kentucky, and authorized to do business in the State _____ or, that as a domestic corporation, we are in good standing with the Secretary of State, Commonwealth of Kentucky _____. Check the statement applicable.
6. This offer is for 60 calendar days from the date this bid is opened. In submitting the above, it is expressly agreed that, upon proper acceptance by the Lexington-Fayette Urban County Government of any or all items bid above, a contract shall thereby be created with respect to the items accepted.
7. That I have fully informed myself regarding the accuracy of the statements made in this statement.
8. That I certify that Subcontractors have not and will not be awarded to any firm(s) that have been debarred from noncompliance with the Federal Labor Standards, Title VI of the Civil Rights Act of 1964 As Amended, Executive Order 11246 As Amended or any other Federal Law.

9. STATEMENT OF EXPERIENCE

NAME OF INDIVIDUAL: Juan Flynn

POSITION/TITLE: Finance Director

STATEMENT OF EXPERIENCE: _____

9 years of power a power plant operater (unit operator, electrical switching, and outage coordination)

7 years transmission controls (Switching operator, 3 years as group controls lead)

NAME OF INDIVIDUAL: Jorge Diaz

POSITION/TITLE: Managing Director

STATEMENT OF EXPERIENCE: Combined 30 years Utility and Electrical experience.

19 years with LGE-KU in various capacities the last 4 years as the supervisor

over the Transmission Operations Department. 11 years with PSEG in New Jersey.

The majority of time spent as the Engineering Tech over distribution construcion.

NAME OF INDIVIDUAL: Eric Alvey

POSITION/TITLE: Area Foreman

STATEMENT OF EXPERIENCE: _____

The area foreman and foreman have several years with commercial projects from retail gas stations, store fronts, and various industrial enviroments leading large crews.

NAME OF INDIVIDUAL: Joesph Poddam

POSITION/TITLE: Area Foreman

STATEMENT OF EXPERIENCE: _____

18 years of electrical experince. Industiral and commercial services, IBEW journey electricans
Leading crews of various size 5-60 individuals to complete complex projects

NAME OF INDIVIDUAL: _____

POSITION/TITLE: _____

STATEMENT OF EXPERIENCE: _____

NAME OF INDIVIDUAL: _____

POSITION/TITLE: _____

STATEMENT OF EXPERIENCE: _____

* Include all officers, office management's, Affirmative Action officials, and field management personnel. (Attach separate sheets if necessary.)

10. EQUAL OPPORTUNITY AGREEMENT

Standard Title VI Assurance

The Lexington Fayette-Urban County Government, (hereinafter referred to as the "Recipient") hereby agrees that as a condition to receiving any Federal financial assistance from the U.S. Department of Transportation, it will comply with Title VI of the Civil Rights Act of 1964, 78Stat.252, 42 U.S.C. 2000d-4 (hereinafter referred to as the "Act"), and all requirements imposed by or pursuant to Title 49, Code of Federal Regulations, U.S. Department of Transportation, Subtitle A, Office of the Secretary, (49 CFR, Part 21) Nondiscrimination in Federally Assisted Program of the Department of Transportation – Effectuation of Title VI of the Civil Rights Act of 1964 (hereinafter referred to as the "Regulations") and other pertinent directives, no person in the United States shall, on the grounds of race, color, national origin, sex, age (over 40), religion, sexual orientation, gender identity, veteran status, or disability be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity for which the Recipient receives Federal financial assistance from the U.S. Department of Transportation, including the Federal Highway Administration, and hereby gives assurance that will promptly take any necessary measures to effectuate this agreement. This assurance is required by subsection 21.7(a) (1) of the Regulations.

The Law

- * Title VII of the Civil Rights Act of 1964 (amended 1972) states that it is unlawful for an employer to discriminate in employment because of race, color, religion, sex, age (40-70 years) or national origin.
- * Executive Order No. 11246 on Nondiscrimination under Federal contract prohibits employment discrimination by contractor and subcontractor doing business with the Federal Government or recipients of Federal funds. This order was later amended by Executive Order No. 11375 to prohibit discrimination on the basis of sex.
- * Section 503 of the Rehabilitation Act of 1973 States:
The Contractor will not discriminate against any employee or applicant for employment because of physical or mental handicap.
- * Section 2012 of the Vietnam Era Veterans Readjustment Act of 1973 requires Affirmative Action on behalf of disabled veterans and veterans of the Vietnam Era by contractors having Federal Contracts.
- * Section 206 (A) of Executive Order 12086, Consolidation of Contract Compliance Functions for Equal Employment Opportunity, states:
The Secretary of Labor may investigate the employment practices of any Government contractor or sub-contractor to determine whether or not the contractual provisions specified in Section 202 of this order have been violated.

The Lexington-Fayette Urban County Government practices Equal Opportunity in recruiting, hiring and promoting. It is the Government's intent to affirmatively provide employment opportunities for those individuals who have previously not been allowed to enter into the mainstream of society. Because of its importance to the local Government, this policy carries the full endorsement of the Mayor, Commissioners, Directors, and all supervisory personnel. In following this commitment to Equal Employment Opportunity and because the Government is the benefactor of the Federal funds, it is both against the Urban County Government policy and illegal

for the Government to let contracts to companies which knowingly or unknowingly practice discrimination in their employment practices. Violation of the above mentioned ordinances may cause a contract to be canceled and the contractor may be declared ineligible for future consideration.

Please sign this statement in the appropriate space acknowledging that you have read and understand the provisions contained herein. Return this document as part of your application packet.

Bidders

I/We agree to comply with the Civil Rights Laws listed above that govern employment rights of minorities, women, Vietnam veterans, handicapped, and aged persons.


Signature

Aequitas Power Company

Name of Business

The Entity (regardless of whether construction contractor, non-construction contractor or supplier) agrees to provide equal opportunity in employment for all qualified persons, to prohibit discrimination in employment because of race, color, religion, sex (including pregnancy, sexual orientation or gender identity), national origin, disability, age, genetic information, political affiliation, or veteran status, and to promote equal employment through a positive, continuing program from itself and each of its sub-contracting agents. This program of equal employment opportunity shall apply to every aspect of its employment policies and practices.

The Kentucky equal Employment Opportunity Act of 1978 (KRS 45.560-45.640) requires that any count, city, town, school district, water district, hospital district, or other political subdivision of the state shall include in directly or indirectly publicly funded contracts for supplies, materials, services, or equipment hereinafter entered into the following provisions:

During the performance of this contract, the contractor agrees as follows:

- (1) *The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, age or national origin;*
- (2) *The contractor will state in all solicitations or advertisements for employees placed by or on behalf of the contractors that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, age or national origin;*
- (3) *The contract will post notices in conspicuous places, available to employees and applicants for employment, setting forth the provisions of the non-discrimination clauses required by this section; and*
- (4) *The contractor will send a notice to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding advising the labor union or workers' representative of the contractor's commitments under the nondiscrimination clauses.*

The Act further provides:

KRS 45.610. Hiring minorities – Information required

- (1) *For the length of the contract, each contractor shall hire minorities from other sources within the drawing area, should the union with which he has collective bargaining agreements be unwilling to supply sufficient minorities to satisfy the agreed upon goals and timetable.*
- (2) *Each contractor shall, for the length of the contract, furnish such information as required by KRS 45.560 to KRS 45.640 and by such rules, regulations and orders issued pursuant thereto and will permit access to all books and records pertaining to his employment practices and work sites by the contracting agency and the department for purposes of investigation to ascertain compliance with KRS 45.560 to 45.640 and such rules, regulations and orders issued pursuant thereto.*

KRS 45.620. Action against contractor – Hiring of minority contractor or subcontractor

- (1) *If any contractor is found by the department to have engaged in an unlawful practice under this chapter during the course of performing under a contract or subcontract covered under KRS 45.560 to 45.640, the department shall so certify to the contracting agency and such certification shall be binding upon the contracting agency unless it is reversed in the course of judicial review.*
- (2) *If the contractor is found to have committed an unlawful practice under KRS 45.560 to 45.640, the contracting agency may cancel or terminate the contract, conditioned upon a program for future compliance approved by the contracting agency and the department. The contracting agency may declare such a contractor ineligible to bid on further contracts with that agency until such time as the contractor complies in full with the requirements of KRS 45.560 – 45.640.*
- (3) *The equal employment provisions of KRS 45.560 to 45.640 may be met in part by a contractor by subcontracting to a minority contractor or subcontractor. For the provisions of KRS 45.560 to 45.640, a minority contractor or subcontractor shall mean a business that is owned and controlled by one or more persons disadvantaged by racial or ethnic circumstances.*

KRS 45.630 Termination of existing employee not required, when

Any provision of KRS 45.560 to 45.640 notwithstanding, no contractor shall be required to terminate an existing employee upon proof that that employee was employed prior to the date of the contract.

KRS 45.640 Minimum skills

Nothing in KRS 45.560 to 45.640 shall require a contractor to hire anyone who fails to demonstrate the minimum skills required to perform a particular job.

It is recommended that all of the provisions quoted above to be included as special conditions in each contract. In the case of a contract exceeding \$250,000, the contractor is required to furnish evidence that his work-force in Kentucky is representative of the available work-force in the area from which he draws employees, or to supply an Affirmative Action plan which will achieve such representation during the life of the contract.

11. EQUAL EMPLOYMENT OPPORTUNITY AFFIRMATIVE ACTION POLICY

It is the policy of Aequitas Power Company

to assure that all applicants for employment and all employees are treated on a fair and equitable basis without regard to their race, religion, sex, color, handicap, natural origin or age.

Such action shall include employment, promotion, demotion, recruitment or recruitment advertising, layoff or termination, rates of pay and other forms of compensation, and selection for training, whether apprenticeship and/or on-the-job-training.

Furthermore, this company agrees to make special recruitment efforts to hire the protected class whenever feasible. This company also agrees to adhere to all applicable federal, state, and local laws relating to Equal Employment Opportunity for all individuals.

12. **WORKFORCE ANALYSIS FORM**

Name of Organization: Aequitas Power Company

Categories	Total	White (Not Hispanic or Latino)		Hispanic or Latino		Black or African- American (Not Hispanic or Latino)		Native Hawaiian and Other Pacific Islander (Not Hispanic or Latino)		Asian (Not Hispanic or Latino)		American Indian or Alaskan Native (not Hispanic or Latino)		Two or more races (Not Hispanic or Latino)		Total	
		M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Administrators	1				X												1
Professionals	3	X		X		X										3	
Superintendents																	
Supervisors																	
Foremen	5	X														5	
Technicians																	
Protective Service																	
Para-Professionals																	
Office/Clerical																	
Skilled Craft	5	X	X													4	1
Service/Maintenance																	
Total:	14															12	2

Prepared by:

Jorge Diaz
(Name and Title)

Date: 04/02/2025

Revised 2015-Dec-15

Jorge Diaz | Managing Director

13. EVIDENCE OF INSURABILITY

LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT CONSTRUCTION PROJECT
(Use separate form for each Agency or Brokerage agreeing to provide coverage)

Names Insured: Aequitas Power Company

Employee ID: 88-3809575

Address: 153 Plantation Dr Shelbyville KY 40065

Phone: 502-257-3518

Project to be insured: Town Branch WWTP Primary Effluent Pump Station MCC Replacement 42-2026

In lieu of obtaining certificates of insurance at this time, the undersigned agrees to provide the above Named Insured with the minimum coverage listed below. These are outlined in the Insurance and Risk Management of Part V (Special Conditions), including all requirements, and conditions:

Section Items	Coverage	Minimum Limits and Policy Requirements	Limits Provided To Insured	Name of Insurer	A.M. Best's Code	Rating
SC-2 - see provisions	CGI	\$1,000,000 per occ. And \$2,000,000 aggregate	\$1,000,000 Ea Occ \$2,000,000 Agg	Scottsdale Insurance	003292	A
SC-2 - see provisions	AUTO	\$1,000,000 per occ.	\$1,000,000 Ea Occ	Acuity	000468	A+
SC-2 - see provisions	WC	Statutory w/ endorsement as noted	\$ Statutory Limits	Carolina Casualty Ins	000236	A+
SC-2 - see provisions	EXC	\$5,000,000 per occ.	\$5,000,000 Ea Occ	RSUI Indemnity Co	012603	A++

Section 2 includes required provisions, statements regarding insurance requirements, and the undersigned agrees to abide by all provisions for the coverage's checked above unless stated otherwise when submitting.

Houchens Insurance Group

Agency or Brokerage

410 Ring Road

Street Address

Elizabethtown KY 42701

City State Zip

270-737-2828

Telephone Number

Angie Keene

Name of Authorized Representative

Client Advisor

Title



Authorized Signature

03/31/2025

Date

NOTE: Authorized signatures may be the agent's if agent has placed insurance through an agency agreement with the insurer. If insurance is brokered, authorized signature must be that of authorized representative of insurer.

IMPORTANT: Contract may not be awarded if a completed and signed copy of this form for all coverage's listed above is not provided with the bid.

14. DEBARRED FIRMS

PROJECT NAME: Town Branch WWTP Primary Effluent Pump Station MCC Replacement

BID NUMBER: 42-2025

**LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT
LEXINGTON, KY**

All prime Contractors shall certify that Subcontractors have not and will not be awarded to any firms that has been debarred for noncompliance with the Federal Labor Standards, Title VI of the Civil Rights Act of 1964 As Amended, Executive Order 11246 As Amended or any other Federal Law.

All bidders shall complete the attached certification in duplicate and submit both copies to the Owner with the bid proposal. The Owner (grantee) shall transmit one copy to the Lexington-Fayette Urban County Government, Division of Community Development, within fourteen (14) days after bid opening.

The undersigned hereby certifies that the firm of Aequitas Power Company has not and will not award a subcontract, in connection with any contract award to it as the result of this bid, to any firm that has been debarred for noncompliance with the Federal labor Standards, Title VI of the civil Rights Act of 1964, Executive Order 11246 as amended or any Federal Law.

Aequitas Power Company

Name of Firm Submitting Bid

Jose Diaz
Signature of Authorized Official

Managing Director

Title

04/ 02/ 2025

Date

15. DEBARMENT CERTIFICATION

All contractors/subcontractors shall complete the following certification and submit it with the bid proposal.

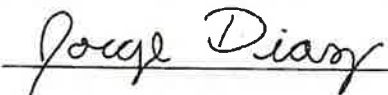
The contractor/subcontractor certifies in accordance with Executive Order 12549 (Debarment and Suspension 2/18/86) that to the best of its knowledge and belief, that it and its principals:

- 1) Are not presently debarred, suspended, proposed for debarment, declared negligible, or voluntarily excluded from covered transactions or contract by any Federal department or agency for noncompliance with the Federal Labor Standards, Title VI of the Civil Rights Act of 1964 as amended, Executive Order 11246 as amended or any other Federal law;
 - a) Have not within a three year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
 - b) Are not presently indicted for or otherwise criminally or civilly charged by a government entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (1)(a) of this certification; and
 - c) Have not within a three year period preceding this bid has one or more public (Federal, State or local) transactions or contracts terminated for cause or default.
- 2) Where the contractor is unable to certify to any of the statements in this certification, such prospective contractors shall attach an explanation to this certification form.

Firm Name: Aequitas Power Company

Project: 42-2025

Printed Name and Title of Authorized Representative: Jorge Diaz

Signature: 

Date: 04/ 02/ 2025

END OF SECTION

AIA Document A310™ - 2010

Bid Bond

CONTRACTOR:

(Name, legal status and address)

Aequitas Power Company, LLC
153 Plantation Drive Shelbyville,
KY 40065

OWNER:

(Name, legal status and address)

Lexington-Fayette Urban County Government (LFUCG)
200 East Main Street Lexington, Kentucky 40507

SURETY:

(Name, legal status and principal place
of business)

Gray Insurance Company
P.O. BOX 6202, METAIRIE, LA
70009 - 6202

This document has important legal
consequences. Consultation with
an attorney is encouraged with
respect to its completion or
modification.

Any singular reference to
Contractor, Surety, Owner or
other party shall be considered
plural where applicable

BOND AMOUNT: Five Percent of the Lump Sum Base Bid Amount
(5% of the Lump Sum Base Bid Amount)

PROJECT:

(Name, location or address, and Project number, if any)

Town Branch WWTP Primary Effluent Pump Station MCC
Replacement

The Contractor and Surety are bound to the Owner in the amount set forth above, for the payment of which the Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, as provided herein. The conditions of this Bond are such that if the Owner accepts the bid of the Contractor within the time specified in the bid documents, or within such time period as may be agreed to by the Owner and Contractor, and the Contractor either (1) enters into a contract with the Owner in accordance with the terms of such bid, and gives such bond or bonds as may be specified in the bidding or Contract Documents, with a surety admitted in the jurisdiction of the Project and otherwise acceptable to the Owner, for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof; or (2) pays to the Owner the difference, not to exceed the amount of this Bond, between the amount specified in said bid and such larger amount for which the Owner may in good faith contract with another party to perform the work covered by said bid, then this obligation shall be null and void, otherwise to remain in full force and effect. The Surety hereby waives any notice of an agreement between the Owner and Contractor to extend the time in which the Owner may accept the bid. Waiver of notice by the Surety shall not apply to any extension exceeding sixty (60) days in the aggregate beyond the time for acceptance of bids specified in the bid documents, and the Owner and Contractor shall obtain the Surety's consent for an extension beyond sixty (60) days.

If this Bond is issued in connection with a subcontractor's bid to a Contractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

When this Bond has been furnished to comply with a statutory or other legal requirement in the location of the Project, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

Signed and sealed this 4th

day of April

2025

(Witness)



Aequitas Power Company, LLC

(Principal)

Finance Director

(Seal)

(Title)

Gray Insurance Company

(Surety)

R. Meyer Hundley, Attorney-in-Fact

(Seal)

CAUTION: You should sign an original AIA Contract Document, on which this text appears in RED. An original assures that changes will not be obscured.

Int.

AIA Document A310™ - 2010. Copyright © 1963, 1970 and 2010 by The American Institute of Architects. All rights reserved. **WARNING:** This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law. Purchasers are permitted to reproduce ten (10) copies of this document when completed. To report copyright violations of AIA Contract Documents, e-mail The American Institute of Architects' legal counsel, copyright@aia.org

001113

**THE GRAY INSURANCE COMPANY
THE GRAY CASUALTY & SURETY COMPANY**

GENERAL POWER OF ATTORNEY

Bond Number: Bid **Principal:** Aequitas Power Company, LLC

Project: Town Branch WWTP Primary Effluent Pump Station MCC
Replacement

KNOW ALL BY THESE PRESENTS, THAT The Gray Insurance Company and The Gray Casualty & Surety Company, corporations duly organized and existing under the laws of Louisiana, and having their principal offices in Metairie, Louisiana, do hereby make, constitute, and appoint: **James T. Smith, Deborah S. Neichter, Jason D. Cromwell, Ryan C. Britt, and R. Meyer Hundley of Louisville, Kentucky jointly and severally** on behalf of each of the Companies named above its true and lawful Attorney(s)-in-Fact, to make, execute, seal and deliver, for and on its behalf and as its deed, bonds, or other writings obligatory in the nature of a bond, as surety, contracts of suretyship as are or may be required or permitted by law, regulation, contract or otherwise, provided that no bond or undertaking or contract of suretyship executed under this authority shall exceed the amount of \$25,000,000.00.

This Power of Attorney is granted and is signed by facsimile under and by the authority of the following Resolutions adopted by the Boards of Directors of both The Gray Insurance Company and The Gray Casualty & Surety Company at meetings duly called and held on the 26th day of June, 2003.

"RESOLVED, that the President, Executive Vice President, any Vice President, or the Secretary be and each or any of them hereby is authorized to execute a power of Attorney qualifying the attorney named in the given Power of Attorney to execute on behalf of the Company bonds, undertakings, and all contracts of surety, and that each or any of them is hereby authorized to attest to the execution of such Power of Attorney, and to attach the seal of the Company; and it is

FURTHER RESOLVED, that the signature of such officers and the seal of the Company may be affixed to any such Power of Attorney or to any certificate relating thereto by facsimile, and any such Power of Attorney or certificate bearing such facsimile signature or facsimile seal shall be binding upon the Company now and in the future when so affixed with regard to any bond, undertaking or contract of surety to which it is attached.

IN WITNESS WHEREOF, The Gray Insurance Company and The Gray Casualty & Surety Company have caused their official seals to be hereinto affixed, and these presents to be signed by their authorized officers this 4th day of November, 2022.



By:

Michael T. Gray

Michael T. Gray
President
The Gray Insurance Company

Cullen S. Piske

Cullen S. Piske
President
The Gray Casualty & Surety Company



State of Louisiana

ss:

Parish of Jefferson

On this 4th day of November, 2022, before me, a Notary Public, personally appeared Michael T. Gray, President of The Gray Insurance Company, and Cullen S. Piske, President of The Gray Casualty & Surety Company, personally known to me, being duly sworn, acknowledged that they signed the above Power of Attorney and affixed the seals of the companies as officers of, and acknowledged said instrument to be the voluntary act and deed, of their companies.



Leigh Anne Henican
Notary Public
Notary ID No. 92653
Orleans Parish, Louisiana

Leigh Anne Henican

Leigh Anne Henican
Notary Public, Parish of Orleans State of Louisiana
My Commission is for Life

I, Mark S. Manguno, Secretary of The Gray Insurance Company, do hereby certify that the above and foregoing is a true and correct copy of a Power of Attorney given by the companies, which is still in full force and effect. IN WITNESS WHEREOF, I have set my hand and affixed the seals of the Company this 4th day of April, 2025.

Mark S. Manguno

I, Leigh Anne Henican, Secretary of The Gray Casualty & Surety Company, do hereby certify that the above and foregoing is a true and correct copy of a Power of Attorney given by the companies, which is still in full force and effect. IN WITNESS WHEREOF, I have set my hand and affixed the seals of the Company this 4th day of April, 2025.

Leigh Anne Henican



Project Scope: Town Branch WWTP Lexington KY

Overview: Replacement of the pump MCC

This project is a remodel of an existing facility, specifically the Primary Effluent Pump Station at the Town Branch Wastewater Treatment Plant (WWTP). The primary scope includes the replacement of the Motor Control Center (MCC-F) and associated electrical upgrades, such as new conduits, wiring, and control circuits, supported by a bypass pumping plan to maintain operations during the process.

1. Project Background and description:

Electrical Scope of work

2. Addendums:

- Addendum 1

3. Project Scope:

Permit and inspections to be obtained and maintained on site

Demo:

- Removal of the MCC will be performed in phases. A certain number of pumps must be available for operation and the bypass pumping station will be set up on site through the vendor that has been contracted with the owner
- Remove the current MMC-F
- Material will be dismantled and removed off from the site
- Existing wire will be pulled and placed out of the way to avoid damage

Site:

-

Lighting:

- N/A

Power:

- MCC-F will be replaced using EATON Equipment
- Replacement will happen in phase in coordination with the owner to allow for certain equipment to remain in service.

-

Low Voltage:

- N/A

Hight level requirements:

- Division 26

4. Deliverables:

- Electrically ready facility that is inspected, permitted, tested, and insure proper operation of electrical equipment
- Debris to be clean daily from electrical work

5. Exclusion from scope:

-

6. High- level Timeline/schedule:

- Project will last 4 weeks or less this includes demo, new work, and testing
- Per the supplier
- Equipment time frame is 45+ weeks out
- Shipment 36 weeks after release of approved drawings.
- Approval Drawings 18 weeks.

Alt estimate for Squared D equipment is

All Change orders to be approved by Juan Flynn or Jorge Diaz

AIA® Document A310™ – 2010

Bid Bond

CONTRACTOR:

(Name, legal status and address)

Aequitas Power Company, LLC
153 Plantation Drive Shelbyville,
KY 40065

OWNER:

(Name, legal status and address)

Lexington-Fayette Urban County Government (LFUCG)
200 East Main Street Lexington, Kentucky 40507

SURETY:

(Name, legal status and principal place
of business)

Gray Insurance Company
P.O. BOX 6202, METAIRIE, LA
70009 - 6202

This document has important legal
consequences. Consultation with
an attorney is encouraged with
respect to its completion or
modification.

Any singular reference to
Contractor, Surety, Owner or
other party shall be considered
plural where applicable

BOND AMOUNT: Five Percent of the Lump Sum Base Bid Amount
(35% of the Lump Sum Base Bid Amount)

PROJECT:

(Name, location or address, and Project number, if any)


Town Branch WWTP Primary Effluent Pump Station MCC
Replacement

The Contractor and Surety are bound to the Owner in the amount set forth above, for the payment of which the Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, as provided herein. The conditions of this Bond are such that if the Owner accepts the bid of the Contractor within the time specified in the bid documents, or within such time period as may be agreed to by the Owner and Contractor, and the Contractor either (1) enters into a contract with the Owner in accordance with the terms of such bid, and gives such bond or bonds as may be specified in the bidding or Contract Documents, with a surety admitted in the jurisdiction of the Project and otherwise acceptable to the Owner, for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof; or (2) pays to the Owner the difference, not to exceed the amount of this Bond, between the amount specified in said bid and such larger amount for which the Owner may in good faith contract with another party to perform the work covered by said bid, then this obligation shall be null and void, otherwise to remain in full force and effect. The Surety hereby waives any notice of an agreement between the Owner and Contractor to extend the time in which the Owner may accept the bid. Waiver of notice by the Surety shall not apply to any extension exceeding sixty (60) days in the aggregate beyond the time for acceptance of bids specified in the bid documents, and the Owner and Contractor shall obtain the Surety's consent for an extension beyond sixty (60) days.

If this Bond is issued in connection with a subcontractor's bid to a Contractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

When this Bond has been furnished to comply with a statutory or other legal requirement in the location of the Project, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

Signed and sealed this 4th day of April 2025

(Witness) 

Aequitas Power Company, LLC

(Principal)

Finance Director

(Seal)

(Title)

Gray Insurance Company

(Surety)

(Title) R. Meyer Hundley, Attorney-in-Fact

(Seal)

CAUTION: You should sign an original AIA Contract Document, on which this text appears in RED. An original assures that changes will not be obscured.

AIA Document A310™ – 2010. Copyright © 1963, 1970 and 2010 by The American Institute of Architects. All rights reserved. **WARNING:** This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law. Purchasers are permitted to reproduce ten (10) copies of this document when completed. To report copyright violations of AIA Contract Documents, e-mail The American Institute of Architects' legal counsel, copyright@aia.org

001110

THE GRAY INSURANCE COMPANY
THE GRAY CASUALTY & SURETY COMPANY

GENERAL POWER OF ATTORNEY

Bond Number: Bid Principal: Aequitas Power Company, LLC

Project: Town Branch WWTP Primary Effluent Pump Station MCC
Replacement

KNOW ALL, BY THESE PRESENTS, THAT The Gray Insurance Company and The Gray Casualty & Surety Company, corporations duly organized and existing under the laws of Louisiana, and having their principal offices in Metairie, Louisiana, do hereby make, constitute, and appoint: **James T. Smith, Deborah S. Neichter, Jason D. Cromwell, Ryan C. Britt, and R. Meyer Hundley of Louisville, Kentucky jointly and severally** on behalf of each of the Companies named above its true and lawful Attorney(s)-in-Fact, to make, execute, send and deliver, for and on its behalf and as its deed, bonds, or other writings obligatory in the nature of a bond, as surety, contracts of suretyship as are or may be required or permitted by law, regulation, contract or otherwise, provided that no bond or undertaking or contract of suretyship executed under this authority shall exceed the amount of \$25,000,000.00.

This Power of Attorney is granted and is signed by facsimile under and by the authority of the following Resolutions adopted by the Boards of Directors of both The Gray Insurance Company and The Gray Casualty & Surety Company at meetings duly called and held on the 26th day of June, 2003.

"RESOLVED, that the President, Executive Vice President, any Vice President, or the Secretary be and each or any of them hereby is authorized to execute a power of Attorney qualifying the attorney named in the given Power of Attorney to execute on behalf of the Company bonds, undertakings, and all contracts of surety, and that each or any of them is hereby authorized to attest to the execution of such Power of Attorney, and to attach the seal of the Company; and it is

FURTHER RESOLVED, that the signature of such officers and the seal of the Company may be affixed to any such Power of Attorney or to any certificate relating thereto by facsimile, and any such Power of Attorney or certificate bearing such facsimile signature or facsimile seal shall be binding upon the Company now and in the future when so affixed with regard to any bond, undertaking or contract of surety to which it is attached.

IN WITNESS WHEREOF, The Gray Insurance Company and The Gray Casualty & Surety Company have caused their official seals to be hereinto affixed, and these presents to be signed by their authorized officers this 4th day of November, 2022.



By:

Michael T. Gray

Michael T. Gray
President
The Gray Insurance Company

Cullen S. Piske

Cullen S. Piske
President
The Gray Casualty & Surety Company



State of Louisiana

ss:

Parish of Jefferson

On this 4th day of November, 2022, before me, a Notary Public, personally appeared Michael T. Gray, President of The Gray Insurance Company, and Cullen S. Piske, President of The Gray Casualty & Surety Company, personally known to me, being duly sworn, acknowledged that they signed the above Power of Attorney and affixed the seals of the companies as officers of, and acknowledged said instrument to be the voluntary act and deed, of their companies.



Leigh Anne Henican
Notary Public
Notary ID No. 92653
Orleans Parish, Louisiana

Leigh Anne Henican

Leigh Anne Henican
Notary Public, Parish of Orleans State of Louisiana
My Commission is for Life

I, Mark S. Manguno, Secretary of The Gray Insurance Company, do hereby certify that the above and forgoing is a true and correct copy of a Power of Attorney given by the companies, which is still in full force and effect. IN WITNESS WHEREOF, I have set my hand and affixed the seals of the Company this 4th day of April, 2025

Mark S. Manguno

I, Leigh Anne Henican, Secretary of The Gray Casualty & Surety Company, do hereby certify that the above and forgoing is a true and correct copy of a Power of Attorney given by the companies, which is still in full force and effect. IN WITNESS WHEREOF, I have set my hand and affixed the seals of the Company this 4th day of April, 2025

Leigh Anne Henican





Andy Beshear
GOVERNOR

TRANSPORTATION CABINET

200 Mero Street
Frankfort, Kentucky 40601

Jim Gray
SECRETARY

August 21, 2024

Jorge Diaz, Managing Director
AEQUITAS POWER COMPANY, LLC
6235 St. John Road
Elizabethtown, KY 42701

Subject: DBE Certification Renewal-Update

Dear Mr. Diaz:

The Kentucky Transportation Cabinet's DBE Certification Committee has determined that **AEQUITAS POWER COMPANY, LLC** continues to meet the eligibility requirements of a minority-owned Disadvantaged Business Enterprise (DBE) and remains program-eligible pursuant to 49 CFR Part 26.

AEQUITAS POWER COMPANY, LLC is DBE certified to perform the below NAICS code(s), which include the following item(s) of work:

237310 - Highway, Street, and Bridge Construction;
238210 - Electrical Contractors and Other Wiring Installation Contractors;
238910 - Site Preparation Contractors;
238990 - All Other Specialty Trade Contractors;
541990 - All Other Professional, Scientific, and Technical Services; and
561730 - Landscaping Services

Absent a finding of regulatory non-compliance, a change in the majority ownership and/or control, or a successful third-party challenge, **this certification will be eligible for review on April 19, 2026.**

In accordance with 49 CFR §26.83(j), this firm will be required to submit an affidavit annually by **April 30** to determine whether your firm continues to meet the standards as set forth in 49 CFR Part 26.

Sincerely,

Brad Putty
DBE Administrative Branch Manager
Small Business Development Branch

mrt/BP

THIS CERTIFIES THAT

Aequitas Power Company, LLC
dba Aequitas Power Company



* Nationally certified by the: **TRISTATE MINORITY SUPPLIER DEVELOPMENT COUNCIL**

*NAICS Code(s): 237130; 481219; 238990; 238210; 238910; 561730

* Description of their product/services as defined by the North American Industry Classification System (NAICS)

10/15/2024

Issued Date

TN04377

Certificate Number

11/14/2025

Expiration Date

A handwritten signature in black ink, appearing to read "Ying McGuire", is positioned above the printed name and title.

Ying McGuire
NMSDC CEO and President

A handwritten signature in black ink, appearing to read "Cheri K. Henderson", is positioned above the printed name and title.

Cheri K. Henderson, President/CEO

By using your password (NMSDC issued only), authorized users may log into NMSDC Central to view the entire profile: <http://nmsdc.org>

[Certify](#), [Develop](#), [Connect](#), [Advocate](#).

* MBEs certified by an Affiliate of the National Minority Supplier Development Council, Inc.®

ESTIMATE

Aequitas Power Company, LLC
401 4th Street, PO Box 1407
Shelbyville, KY 40065

accountsreceivable@aequitaspower.com
+1 (502) 667-3460
www.aequitaspower.com



Bill to
All Estimates

Estimate details

Estimate no.: 1192
Estimate date: 04/01/2025

Location: Town Branch WTPC MCC

#	Product/service	Description	Amount
1.	Electrical Services	Eaton Equipment Electrician Services Electrical Scope of work Lump sum estimate Estimate includes material, labor, equipment, permits, inspections, and taxes to complete the scope of work -SOW Associated with the estimate Juan Flynn 502-434-8329 4 weeks/ 5 workers material including conduit and conductor that may need to be replace	\$438,800.00
2.	Electrical Services	Square D equipment Electrician Services using Electrical Scope of work Lump sum estimate Estimate includes material, labor, equipment, permits, inspections, and taxes to complete the scope of work -SOW Associated with the estimate Juan Flynn 502-434-8329 4 weeks/ 5 workers material including conduit and conductor that may need to be replace	\$558,000.00
3.	Electrical Services	allowance	\$18,000.00
Total			\$1,014,800.00

Note to customer

Town Branch WTPC MCC

Accepted date

Accepted by

PART IV
GENERAL CONDITIONS
TABLE OF CONTENTS

Article Number	Title	Page
1.	DEFINITIONS	GC-6
2.	PRELIMINARY MATTERS.....	GC-10
3.	CONTRACT DOCUMENTS: INTENT, CONFLICTS, AMENDING AND REUSE	GC-11
4.	AVAILABILITY OF LANDS; PHYSICAL CONDITIONS; REFERENCE POINTS	GC-13
5.	CONTRACTOR'S RESPONSIBILITIES	GC-16
6.	OTHER WORK	GC-27
7.	OWNER'S RESPONSIBILITIES	GC-28
8.	CONSULTANT'S STATUS DURING CONSTRUCTION	GC-28
9.	CHANGES IN THE WORK	GC-31
10.	CHANGE OF CONTRACT PRICE.....	GC-32
11.	CHANGE OF CONTRACT TIME	GC-39
12.	WARRANTY AND GUARANTEE; TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK.....	GC-39
13.	PAYMENTS TO CONTRACTOR AND COMPLETION	GC-43
14.	SUSPENSION OF WORK AND TERMINATION	GC-47
15.	MISCELLANEOUS	GC-50

DETAILED TABLE OF CONTENTS OF GENERAL CONDITIONS

1. Definitions
2. Preliminary Matters
 - 2.1 Delivery of Bonds
 - 2.2 Copies of Documents
 - 2.3 Commencement of Contract Time; Notice to Proceed
 - 2.4 Starting the Project
 - 2.5 Before Starting Construction
 - 2.6 Submittal of Schedules
 - 2.7 Preconstruction Conference
 - 2.8 Finalizing Schedules
3. Contract Documents, Intent, Conflicts, Amending, and Reuse
 - 3.1 General
 - 3.2 Intent
 - 3.3 Conflicts
 - 3.4 Amending and Supplementing Contract Documents
 - 3.5 Reuse of Documents
4. Availability of Lands, Physical Conditions, Reference Points
 - 4.1 Availability of Lands
 - 4.2 Physical Conditions
 - 4.3 Physical Conditions - Underground Facilities
 - 4.4 Reference Points
5. CONTRACTOR'S Responsibilities
 - 5.1 Supervision
 - 5.2 Superintendence
 - 5.3 Labor
 - 5.4 Start-Up and Completion of Work
 - 5.5 Materials and Equipment
 - 5.6 Adjusting Progress Schedule
 - 5.7 Substitutes or "Or-Equal" Items
 - 5.8 Subcontractors, Suppliers and Others
 - 5.9 Patent Fees and Royalties
 - 5.10 Permits
 - 5.11 Laws and Regulations
 - 5.12 Taxes
 - 5.13 Use of Premises

- 5.14 Record Drawings
- 5.15 Shop Drawings and Samples
- 5.16 Continuing the Work
- 5.17 Erosion and Sediment Control
- 6. Other Work
 - 6.1 Related Work at Site
 - 6.2 Other Contractors or Utility Owners
 - 6.3 Delays Caused By Others
 - 6.4 Coordination
- 7. OWNER'S Responsibilities
 - 7.1 Communications
 - 7.2 Data and Payments
 - 7.3 Lands, Easements, and Surveys
 - 7.4 Change Orders
 - 7.5 Inspections, Tests, and Approvals
 - 7.6 Stop or Suspend Work
- 8. CONSULTANT'S Status During Construction
 - 8.1 OWNER'S Representative
 - 8.2 Visits to Site
 - 8.3 Project Representation
 - 8.4 Clarification and Interpretations
 - 8.5 Authorized Variations in Work
 - 8.6 Rejecting Defective Work
 - 8.7 Shop Drawings
 - 8.8 Change Orders
 - 8.9 Payments
 - 8.10 Determinations for Unit Prices
 - 8.11 Decisions on Disputes
 - 8.12 Limitations on CONSULTANT'S Responsibilities
- 9. Changes in the Work
 - 9.1 OWNER May Order Changes
 - 9.2 Claims
 - 9.3 Work Not in Contract Documents
 - 9.4 Change Orders
 - 9.5 Notice of Change

- 10. Change of Contract Price
 - 10.1 Total Compensation
 - 10.2 Claim for Increase or Decrease in Price
 - 10.3 Value of Work
 - 10.4 Cost of the Work
 - 10.5 Not to Be Included in Cost of the Work
 - 10.6 CONTRACTOR'S Fee
 - 10.7 Itemized Cost Breakdown
 - 10.8 Cash Allowance
 - 10.9 Unit Price Work
- 11. Change of Contract Time
 - 11.1 Change Order
 - 11.2 Justification for Time Extension
 - 11.3 Time Limits
- 12. Warranty and Guarantee; Tests and Inspections; Correction, Removal or Acceptance of Defective Work
 - 12.1 Warranty and Guarantee
 - 12.2 Access to Work
 - 12.3 Tests and Inspections
 - 12.4 OWNER May Stop Work
 - 12.5 Correction or Removal of Defective Work
 - 12.6 One Year Correction Period
 - 12.7 Acceptance of Defective work
 - 12.8 Owner May Correct Defective Work
- 13. Payments to CONTRACTOR and Completion
 - 13.1 Schedule of Values
 - 13.2 Application for Progress Payments
 - 13.3 CONTRACTOR'S Warranty of Title
 - 13.4 Review of Application for Progress Payments
 - 13.5 Partial Utilization
 - 13.6 Final Inspection
 - 13.7 Final Application for Payment
 - 13.8 Final Payment and Acceptance
 - 13.9 CONTRACTOR'S Continuing Obligation
 - 13.10 Waiver of Claims

14. Suspension of Work and Termination

- 14.1 OWNER May Suspend Work
- 14.2 OWNER May Terminate
- 14.3 CONTRACTOR'S Services Terminated
- 14.4 Payment After Termination
- 14.5 CONTRACTOR May Stop or Terminate

15. Miscellaneous

- 15.1 Claims for Injury or Damage
- 15.2 Non-Discrimination in Employment
- 15.3 Temporary Street Closing or Blockage
- 15.4 Percentage of Work Performed by Prime CONTRACTOR
- 15.5 Clean-up
- 15.6 General
- 15.7 Debris Disposal

END OF SECTION

PART IV
GENERAL CONDITIONS

1. DEFINITIONS

Wherever used in these General Conditions or the other Contract Documents, the following terms have the meanings indicated which are applicable to both the singular and plural thereof.

1.1 Addenda

Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bid Documents or the Contract Documents.

1.2 Agreement

The written agreement between OWNER and CONTRACTOR covering the Work to be performed; other Contract Documents are attached to the Agreement and made a part thereof as provided therein.

1.3 Application for Payment

The form accepted by CONSULTANT which is to be used by CONTRACTOR in requesting progress or final payments and which is to include such supporting documentation as is required by the Contract Documents.

1.4 Bid

The offer or proposal of the Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

1.5 Bidder

An individual, partnership, or corporation, who submit a Bid for a prime contract with the OWNER, for the Work described in the proposed Contract Documents.

1.6 Bonds

Bid, performance and payment bonds and other instruments of security.

1.7 Calendar Day

A calendar day of twenty-four hours measured from midnight to the next midnight shall constitute a day.

1.8 Change Order

A document recommended by CONSULTANT, which is signed by CONTRACTOR and OWNER and authorizes an addition, deletion or revision in the Work, or an adjustment in the Contract Price or the Contract Time, issued on or after the Effective Date of the Agreement.

1.9 Contract Documents

The Advertisement for Bidders, Information for Bidders, Agreement, Addenda (which pertain to the Contract Documents), CONTRACTOR'S Bid (including documentation accompanying the Bid and any post-bid documentation submitted prior to the Notice of Award) when attached as an exhibit to the Agreement, the Bonds, these General Conditions, the Special Conditions, the Specifications and the Drawings as the same are more specifically identified in the Agreement, together with all amendments, modifications and supplements.

1.10 Contract Unit Price

The monies payable by OWNER to CONTRACTOR under the Contract Documents as stated in the Agreement. Unit Prices are to be firm for the term of this Contract.

1.11 Contract Time

The number of consecutive calendar days between the date of issuance of the Notice to Proceed and the contract completion date.

1.12 CONTRACTOR

The person, firm or corporation with whom OWNER has entered into the Agreement.

1.13 Defective

An adjective which when modifying the word Work refers to Work that is unsatisfactory, faulty or deficient, or does not conform to the Contract Documents, or does not meet the requirements of any inspection, reference standard, test or approval referred to in the Contract Documents, or has been damaged prior to CONSULTANT'S recommendation of final payment (unless responsibility for the protection thereof has been assumed by OWNER).

1.14 Drawings

The drawings which show the character and scope of the Work to be performed and which have been prepared or approved by CONSULTANT and are referred to in the Contract Documents.

1.15 Effective Date of the Agreement

The date indicated in the Agreement on which it becomes effective.

1.16 CONSULTANT

The Lexington-Fayette Urban County Government or its authorized representative.

1.17 Field Order

A documented order issued by CONSULTANT which orders minor changes in the Work, but which does not involve a change in the Contract Price or the Contract Time.

1.18 Giving Notice

Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or if delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

1.19 Laws and Regulations

Laws, rules, regulations, ordinances, codes and/or orders.

1.20 Notice of Award

The written notice by OWNER to the apparent successful bidder stating that upon compliance by the apparent successful bidder with the conditions enumerated therein, within the time specified, OWNER will sign and deliver the Agreement.

1.21 Notice to Proceed

A written notice given by OWNER to CONTRACTOR fixing the date on which the Contract Time will commence to run and on which CONTRACTOR shall start to perform CONTRACTOR'S obligations under the Contract Documents.

1.22 OWNER

The Lexington-Fayette Urban County Government.

1.23 Partial Utilization

Placing a portion of the Work in service for the purpose for which it is intended (or related purpose) before reaching Completion for all the Work.

1.24 Project

The total construction of which the Work to be provided under the Contract Documents may be the whole, or a part as indicated elsewhere in the Contract Documents.

1.25 Inspector

The authorized representative who is assigned to the site or any part thereof.

1.26 Shop Drawings

All drawings, diagrams, illustrations, schedules and other data which are specifically prepared by or for CONTRACTOR to illustrate some portion of the Work and all illustrations, brochures, standard schedules, performance charts, instructions, diagrams and other information prepared by a Supplier and submitted by CONTRACTOR to illustrate material or equipment for some portion of the Work.

1.27 Specifications

Those portions of the Contract Documents consisting of written technical descriptions of materials, equipment, construction systems, standards and

workmanship as applied to the Work and certain administrative details applicable thereto.

1.28 Standard Specifications

The "Standard Specifications for Road and Bridge Construction", Transportation Cabinet, Department of Highways, Commonwealth of Kentucky, current edition. MUTCD shall refer to the "Manual of Uniform Traffic Control Devices.

1.29 Subcontractor

An individual, firm or corporation having a direct contract with CONTRACTOR or with any other Subcontractor for the performance of a part of the Work at the site.

1.30 Special Conditions

The part of the Contract Documents which amends or supplements these General Conditions.

1.31 Supplier

A manufacturer, fabricator, supplier, distributor, materialman or vendor.

1.32 Underground Facilities

All pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels or other such facilities or attachments, and any encasements containing such facilities which have been installed underground to furnish any of the following services or materials: electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, sewage and drainage removal, traffic or other control systems or water.

1.33 Unit Price Work

An amount equal to the sum of the established unit prices for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.

1.34 Work

The entire completed construction or the various separately identifiable parts thereof required to be furnished under the Contract Documents. Work is the result of performing services, furnishing labor and furnishing and incorporating materials and equipment into the construction, all as required by the Contract Documents.

1.35 Time Period

When any period of time is referred to in the Contract Documents by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

2. PRELIMINARY MATTERS

2.1 Delivery of Bonds

When the CONTRACTOR delivers the executed Agreements to OWNER, CONTRACTOR shall also deliver to OWNER, such Bonds, Insurance Certificate, and Power of Attorney as CONTRACTOR may be required to furnish.

2.2 Copies of Documents

Owner shall furnish to CONTRACTOR up to three copies (unless otherwise specified in the Special Conditions) of the Contract Documents as are reasonably necessary for the execution of the Work. Additional copies will be furnished, upon request, at the cost of reproduction.

2.3 Commencement of Contract Time; Notice to Proceed

The Contract Time will commence to run on the day specified in the Notice to Proceed.

2.4 Starting the Project

CONTRACTOR shall start to perform the Work on the date when the Contract Time commences to run, but no Work shall be done at the site prior to the date on which the Contract Time commences to run.

2.5 Before Starting Construction

Before undertaking each part of the Work, CONTRACTOR shall carefully study and compare the Contract Documents and check and verify pertinent figures shown thereon and all applicable field measurements. CONTRACTOR shall promptly report in writing to CONSULTANT any conflict, error or discrepancy which CONTRACTOR may discover and shall obtain a written interpretation or clarification from CONSULTANT before proceeding with any Work affected thereby; however, CONTRACTOR shall not be liable to OWNER or CONSULTANT for failure to report any conflict, error or discrepancy in the Contract Documents, unless CONTRACTOR had actual knowledge thereof or should reasonably have known thereof.

2.6 Submittal of Schedules

Within ten days after the effective date of the Agreement (unless otherwise specified) CONTRACTOR shall submit to CONSULTANT for review:

2.6.1 an estimated progress schedule indicating the starting and completion dates of the various stages of the Work;

2.6.2 a preliminary schedule of Shop Drawing submissions; and

2.6.3 a preliminary schedule of values for all of the Work which will include quantities and prices of items aggregating the Contract Price and will subdivide the Work into costs per labor and materials by specification

section to serve as the basis for progress payments during construction. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work which will be confirmed in writing by CONTRACTOR at the time of submission. Schedule of values shall be submitted on AIA G702/703 forms, or approved equal.

2.7 Preconstruction Conference

Before CONTRACTOR starts the Work at the proposed site, a conference attended by CONTRACTOR, CONSULTANT, EEO-Affirmative Action Officer, and other appropriate parties will be held to discuss the following issues: (1) The scheduling of the Work to be completed; (2) The procedures for handling shop drawings and other submittals; (3) The processing of applications for payment; (4) The establishment of an understanding among the involved parties in regard to the proposed project; (5) The establishment of procedures for effectively implementing the LFUCG's 10% minimum DBE goals; and (6) Requirement for Mechanic's Lien on Partial Applications for Payment.

2.8 Finalizing Schedules

At least ten days before submission of the first Application for Payment a conference attended by CONTRACTOR, CONSULTANT and others as appropriate will be held to finalize the schedules submitted in accordance with paragraph 2.6. The finalized progress schedule will be acceptable to CONSULTANT as providing orderly progression of the Work to completion within the Contract Time, but such acceptance will neither impose on CONSULTANT responsibility for the progress or scheduling of the Work nor relieve CONTRACTOR from full responsibility thereof. The finalized schedule of Shop Drawing submissions will be acceptable to CONSULTANT as providing a workable arrangement for processing the submissions. The finalized schedule of values will be acceptable to CONSULTANT as to form and substance.

3. CONTRACT DOCUMENTS: INTENT, CONFLICTS, AMENDING AND REUSE

3.1 General

The Contract Documents comprise the entire agreement between OWNER and CONTRACTOR concerning the Work. The Contract Documents are complementary; what is called for by one is as binding as if called for by all. The Contract Documents will be construed in accordance with the law of the place of the Project.

3.2 Intent

It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents. Any Work, materials or equipment that may reasonably be inferred from the Contract Documents as being required to produce the intended result will be supplied whether or not specifically called for. When words which have a well-known technical or trade meaning are used

to describe Work, materials or equipment such words shall be interpreted in accordance with that meaning. Reference to standard specifications, manuals or codes of any technical society, organization or association, or to the laws or regulations of any governmental authority, whether such reference be specific or by implication, shall mean the latest standard specification, manual, code or laws or regulations in effect at the time of opening of Bids (or, on the Effective Date of the Agreement if there were no Bids), except as may be otherwise specifically stated. However, no provision of any referenced standard specification, manual or code (whether or not specifically incorporated by reference in the Contract Documents) shall be effective to change the duties and responsibilities of OWNER, CONTRACTOR or CONSULTANT, or any of their consultants, agents or employees from those set forth in the Contract Documents, nor shall it be effective to assign to CONSULTANT, or any of CONSULTANT'S consultants, agents or employees, any duty or authority to supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of paragraph 8.12.3 or 8.12.4. Clarifications and interpretations of the Contract Documents shall be issued by CONSULTANT as provided in paragraph 8.4.

3.3 Conflicts

If, during the performance of the Work, CONTRACTOR finds a conflict, error or discrepancy in the Contract Documents, CONTRACTOR shall so report to CONSULTANT in writing at once and before proceeding with the Work affected thereby shall obtain a written interpretation or clarification from CONSULTANT; however, CONTRACTOR shall not be liable to OWNER or CONSULTANT for failure to report any conflict, error or discrepancy in the Contract Documents unless CONTRACTOR had actual knowledge thereof or should reasonably have known thereof.

In resolving such conflicts, errors and discrepancies, the documents shall be given precedence in the following order:

1. Agreement
2. Field and Change Orders
3. Addenda
4. Special Conditions
5. Instruction to Bidders
6. General Conditions
7. Specifications and Drawings

Figure dimension on drawings shall govern over scale dimensions and detailed Drawings shall govern over general Drawings.

3.4 Amending and Supplementing Contract Documents

The Contract Documents may be amended to provide for additions, deletions and revisions in the Work or to modify the terms and conditions thereof by means of a Change Order or a Field Order. Contract Price and Contract Time may only be changed by a Change Order.

3.5 Reuse of Documents

Neither CONTRACTOR nor any Subcontractor or Supplier or other person or organization performing or furnishing any of the Work under a direct or indirect contract with OWNER shall have or acquire any title to or ownership rights in any of the Drawings, Specifications or other documents (or copies of any thereof) prepared by or bearing the seal of CONSULTANT; and they shall not reuse any of them on extensions of the Project or any other project without written consent of OWNER and CONSULTANT and specific written verification or adaptation by CONSULTANT.

4. AVAILABILITY OF LANDS; PHYSICAL CONDITIONS, REFERENCE POINTS

4.1 Availability of Lands

OWNER shall furnish, as indicated in the Contract Documents, the lands upon which the Work is to be performed, rights-of-way and easements for access thereto, and such other lands which are designated for the use of CONTRACTOR. Easements for permanent structures or permanent changes in existing facilities will be obtained and paid for by OWNER, unless otherwise provided in the Contract Documents. If CONTRACTOR believes that any delay in OWNER'S furnishing these lands, rights-of-way or easements entitles CONTRACTOR to an extension of the Contract Time, CONTRACTOR may make a claim therefor as provided in Article 11. CONSULTANT shall determine if the claim is legitimate or not. CONTRACTOR shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

4.2 Physical Conditions

4.2.1 Explorations and Reports

Reference is made to the Special Conditions for identification of those reports of explorations and tests of subsurface conditions at the site that have been utilized by CONSULTANT in preparation of the Contract Documents. CONTRACTOR may rely upon the accuracy of the technical data contained in such reports, but not upon non-technical data, interpretations or opinions contained therein or for the completeness thereof for CONTRACTOR'S purposes. Except as indicated in the immediately preceding sentence and in paragraph 4.2.6, CONTRACTOR shall have full responsibility with respect to subsurface conditions at the site.

4.2.2 Existing Structures

Reference is made to the Special Conditions for identification of those drawings of physical conditions in or relating to existing surface and

subsurface structures (except Underground Facilities referred to in paragraph 4.3 which are at or contiguous to the site that have been utilized by CONSULTANT in preparation of the Contract Documents. CONTRACTOR may rely upon the accuracy of the technical data contained in such drawings, but not for the completeness thereof for CONTRACTOR'S purposes. Except as indicated in the immediately preceding sentence and in paragraph 4.2.6, CONTRACTOR shall have full responsibility with respect to physical conditions in or relating to such structures.

4.2.3 Report of Differing Conditions

If CONTRACTOR believes that:

4.2.3.1 any technical data on which CONTRACTOR is entitled to rely as provided in paragraphs 4.2.1 and 4.2.2 is inaccurate, or

4.2.3.2 any physical conditions uncovered or revealed at the site differ materially from that indicated, reflected or referred to in the Contract Documents,

CONTRACTOR shall, promptly after becoming aware thereof and before performing and WORK in connection therewith (except in an emergency) notify OWNER and CONSULTANT in writing about the inaccuracy or difference.

4.2.4 CONSULTANT'S Review

CONSULTANT will promptly review the pertinent conditions, determine the necessity of obtaining additional explorations or tests with respect thereto and advise CONTRACTOR of CONSULTANT'S findings and conclusions.

4.2.5 Possible Document Change

If CONSULTANT concludes that there is a material error in the Contract Documents or that because of newly discovered conditions a change in the Contract Documents is required, a Change Order will be issued as provided in Article 10 to reflect and document the consequences of the inaccuracy or difference.

4.2.6 Possible Price and Time Adjustments

In each such case, an increase or decrease in the Contract Price or an extension or shortening of the Contract Time, or any combination thereof, will be allowable to the extent that they are attributable to any such inaccuracy or difference.

4.3 Physical Conditions-Underground Facilities

4.3.1 Shown or Indicated

The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or contiguous to the site is

based on information and data furnished to OWNER or CONSULTANT by the owners of such underground facilities or by others. Unless it is otherwise expressly provided in the Special Conditions:

4.3.1.1 OWNER and CONSULTANT shall not be responsible for the accuracy or completeness of any such information or data; and,

4.2.1.2 CONTRACTOR shall have full responsibility for reviewing and checking all such information and data; for locating all underground facilities shown or indicated in the Contract Documents; for coordination of the Work with the owners of such underground facilities during construction; and for the safety and protection thereof and repairing any damage thereto resulting from the Work, the cost of all of which will be considered as having been included in the Contract Price.

4.3.2 Not Shown or Indicated

If an underground facility is uncovered or revealed at or contiguous to the site which was not shown or indicated in the Contract Documents and which CONTRACTOR could not reasonably have been expected to be aware of, CONTRACTOR shall, promptly after becoming aware thereof and before performing any Work affected thereby (except in an emergency), identify the owner of such Underground Facility and give written notice thereof to that owner and to OWNER and CONSULTANT. CONSULTANT will promptly review the underground facility to determine the extent to which the Contract Documents should be modified to reflect and document the consequences of the existence of the Underground Facility, and the Contract Documents will be amended or supplemented to the extent necessary. During such time, CONTRACTOR shall be responsible for the safety and protection of such underground facility. CONTRACTOR shall be allowed an increase in the Contract Price or an extension of the Contract Time, or both, to the extent that they are attributable to the existence of any underground facility that was not shown or indicated in the Contract Documents and which CONTRACTOR could not reasonably have been expected to be aware of.

4.4 Reference Points

OWNER shall provide engineering surveys to establish reference points for construction which in CONSULTANT'S judgment are necessary to enable CONTRACTOR to proceed with the Work. CONTRACTOR shall be responsible for laying out the Work (unless otherwise specified), shall protect and preserve the established reference points and shall make no changes or relocations without the prior written approval of OWNER. CONTRACTOR shall report to CONSULTANT whenever any reference point is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points by a Registered Land Surveyor.

5. CONTRACTOR'S RESPONSIBILITIES

5.1 Supervision

CONTRACTOR shall supervise and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. CONTRACTOR shall assure that all CONTRACTOR personnel (including subcontractors, etc.) conduct themselves in a courteous and respectful manner toward the CONSULTANT and the general public. CONTRACTOR shall keep at the Project Site during the progress of the Work a competent project manager/superintendent and all necessary assistants, all of whom shall be satisfactory to OWNER. OWNER reserves the right to reject CONTRACTOR'S construction superintendent and project management personnel if they are unsatisfactory to OWNER and upon such rejection CONTRACTOR shall designate and provide competent successors. Failure to comply with this condition of the Contract will result in immediate suspension of the Work. Following a review by the Commissioner of Public Works, the Contract may be terminated (see GC section 14). CONTRACTOR shall be solely responsible for the means, methods, techniques, sequences and procedures of construction, but CONTRACTOR shall not be responsible for the negligence of others in the design or selection of a specific means, method, technique, sequence or procedure of construction which is indicated in and required by the Contract Documents. CONTRACTOR shall be responsible to see that the finished Work complies accurately with the Contract Documents.

5.2 Superintendence

CONTRACTOR shall keep on the Work at all times during its progress a competent resident superintendent, who shall not be replaced without written notice to OWNER and CONSULTANT except under extraordinary circumstances. The superintendent will be CONTRACTOR'S representative at the site and shall have authority to act on behalf of CONTRACTOR. All communications given to the superintendent shall be as binding as if given to CONTRACTOR.

5.3 Labor

CONTRACTOR shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. CONTRACTOR shall at all times maintain good discipline and order at the site. OWNER reserves the right to require CONTRACTOR to remove from the Project any of its personnel, or subcontractor's personnel for violating LFUCG Policies, Rules or Regulations. Except in connection with the safety or protection of persons or the Work or property at the site or adjacent thereto, and except as otherwise indicated in the Contract Documents, all Work at the site shall be performed during regular working hours, and CONTRACTOR will not permit overtime work or the performance of Work on Saturday, Sunday or any legal holiday without OWNER'S written consent given after prior written notice to CONSULTANT.

5.4 Start-Up and Completion of Work

Unless otherwise specified, CONTRACTOR shall furnish and assume full responsibility for all materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities and all other facilities and incidentals necessary for the furnishing, performance, testing, start-up and completion of the Work.

5.5 Materials and Equipment

All materials and equipment shall be of good quality and new, except as otherwise provided in the Contract Documents. If required by CONSULTANT, CONTRACTOR shall furnish satisfactory evidence (including reports of required tests) as to the kind and quality of materials and equipment. All materials and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned in accordance with the instructions of the applicable supplier except as otherwise provided in the Contract Documents; but no provision of any such instructions will be effective to assign to CONSULTANT, or any of CONSULTANT'S consultants, agents or employees, any duty or authority to supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of paragraph 8.12.3 or 8.12.4.

5.5.1 Not Clearly Specified or Indicated

In all instances where materials specified are obtainable in different sizes, weights, trade grades, qualities or finishes, etc., whose weights, trade grades, qualities or finishes, etc., are not clearly specified or indicated on the Drawings, the CONTRACTOR shall notify the CONSULTANT of all such instances at least five (5) days in advance of receiving the proposals. The CONSULTANT will then determine which size, weight, trade grade, quality, finish, etc., is required.

5.5.2 Coordination of Work

The CONTRACTOR shall see that for his own Work and for the work of each subcontractor, proper templates and patterns necessary for the coordination of the various parts of the Work are prepared. The CONTRACTOR shall furnish or require the Subcontractor to furnish such duplicates as will enable the Subcontractors to fit together and execute fully their respective portions of the Work.

5.6 Adjusting Progress Schedule

CONTRACTOR shall submit to CONSULTANT for acceptance (to the extent indicated in paragraph 2.8) adjustments in the progress schedule to reflect the impact thereon of new developments; these will conform generally to the progress schedule then in effect and additionally will comply with any provisions of the Contract Documents applicable thereto.

5.7 Substitutes or “Or-Equal” Items

5.7.1 General

Whenever materials or equipment are specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular supplier, the naming of the item is intended to establish the type, function, and quality required. Unless the name is followed by words indicating that no substitution is permitted, materials or equipment of other Suppliers may be accepted by OWNER/CONSULTANT if sufficient information is submitted by CONTRACTOR to allow OWNER/CONSULTANT to determine that the material or equipment proposed is equivalent or equal to that named. The procedure for review by OWNER/CONSULTANT will include the following. Requests for review of substitute items of material and equipment will not be accepted by OWNER/CONSULTANT from anyone, other than CONTRACTOR. If CONTRACTOR wishes to furnish or use a substitute item of material or equipment, CONTRACTOR shall make written application to OWNER/CONSULTANT for acceptance thereof, certifying that the proposed substitute will perform adequately the functions and achieve the results called for by the general design, be similar and of equal substance to that specified and be suited to the same use as that specified. The application will state that the evaluation and acceptance of the proposed substitute will not prejudice CONTRACTOR'S achievement of completion on time, whether or not acceptance of the substitute for use in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with OWNER for work on the Project) to adapt the design to the proposed substitute and whether or not incorporation or use of the substitute in connection with the Work is subject to payment of any license fee or royalty. All variations of the proposed substitute from that specified will be identified in the application and available maintenance, repair and replacement service will be indicated. The application will also contain an itemized estimate of all costs that will result directly or indirectly from acceptance of such substitute, including costs of redesign and claims of other contractors affected by the resulting change, all of which shall be considered by OWNER/CONSULTANT in evaluating the proposed substitute. OWNER/CONSULTANT may require CONTRACTOR to furnish at CONTRACTOR'S expense additional data about the proposed substitute.

5.7.2 Substitutes

If a specific means, method, technique, sequence or procedure of construction is indicated in or required by the Contract Documents, CONTRACTOR may furnish or utilize a substitute means, method, sequence, technique or procedure of construction acceptable to OWNER/CONSULTANT, if CONTRACTOR submits sufficient information to allow OWNER/CONSULTANT to determine that the substitute proposed is equivalent to that indicated or required by the Contract

Documents. The procedure for review by OWNER/CONSULTANT will be similar to that provided in paragraph 5.7.1 as applied by OWNER/CONSULTANT.

5.7.3 OWNER/CONSULTANT'S Approval

OWNER/CONSULTANT will be allowed a reasonable time within which to evaluate each proposed substitute. OWNER/CONSULTANT will be the sole judge of acceptability, and no substitute will be ordered, installed or utilized without OWNER/CONSULTANT'S prior written acceptance which will be evidenced by either a Change Order or an approved Shop Drawing. OWNER may require CONTRACTOR to furnish at CONTRACTOR'S expense a special performance guarantee or other surety with respect to any substitute. OWNER/CONSULTANT will record time required by OWNER/CONSULTANT and OWNER/CONSULTANT'S consultants in evaluating substitutions proposed by CONTRACTOR and in making changes in the Contract Documents occasioned thereby. Whether or not OWNER/CONSULTANT accepts a proposed substitute, CONTRACTOR shall reimburse OWNER for the charges of OWNER/CONSULTANT and OWNER/CONSULTANT'S consultants for evaluating each proposed substitute.

5.8 Subcontractors, Suppliers, and Others

5.8.1 Acceptable to CONSULTANT

CONTRACTOR shall not employ any Subcontractor, Supplier or other person or organization (including those acceptable to OWNER and CONSULTANT as indicated in paragraph 5.8.2), whether initially or as a substitute, against whom OWNER or CONSULTANT may have reasonable objection. CONTRACTOR shall not be required to employ any Subcontractor, Supplier or other person or organization to furnish or perform any of the Work against whom CONTRACTOR has reasonable objection.

5.8.2 Objection After Due Investigation

If the Contract Documents require the identity of certain Subcontractors, Suppliers or other persons or organizations (including those who are to furnish the principal items of materials and equipment) to be submitted to OWNER in advance of the specified date prior to the Effective Date of the Agreement for acceptance by OWNER and CONSULTANT and if CONTRACTOR has submitted a list thereof, OWNER'S or CONSULTANT'S acceptance (either in writing or by failing to make written objection thereto by the date indicated for acceptance or objection in the bidding documents or the Contract Documents) of any such Subcontractor, Supplier or other person or organization so identified may be revoked on the basis of reasonable objection after due investigation, in which case CONTRACTOR shall submit an acceptable substitute. No acceptance by

OWNER or CONSULTANT of any such Subcontractor, Supplier or other person or organization shall constitute a waiver of any right of OWNER or CONSULTANT to reject defective Work.

5.8.3 Contractor Responsible for Acts of Subcontractors

The CONTRACTOR shall perform on the site, and with its own organization, work equivalent to at least fifty (50) percent of the total amount of Work to be performed under the Contract. This percentage may be reduced by a supplemental agreement to this Contract if, during performing the Work, the CONTRACTOR requests a reduction and the Urban County project manager determines that the reduction would be to the advantage of the Urban County Government.

The CONTRACTOR shall, at the time he submits his proposal for the Contract, notify the OWNER in writing of the names of Subcontractors proposed for the Work. He shall not employ any Subcontractor without the prior written approval of the OWNER.

CONTRACTOR shall be fully responsible to OWNER and CONSULTANT for all acts and omissions of the Subcontractors, Suppliers and other persons and organizations performing or furnishing any of the Work under a direct or indirect contract with CONTRACTOR just as CONTRACTOR is responsible for CONTRACTOR'S own acts and omissions. Nothing in the Contract Documents shall create any contractual relationship between OWNER or CONSULTANT and any such Subcontractor, Supplier or other person or organization, nor shall it create any obligation on the part of OWNER or CONSULTANT to pay or to see to the payment of any moneys due any such Subcontractor, Supplier or other person or organization except as may otherwise be required by Laws and Regulations.

5.8.4 Division of Specifications

The divisions and sections of the Specifications and the identifications of any Drawings shall not control CONTRACTOR in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.

5.8.5 Agreement Between Contractor and Subcontractors

All Work performed for CONTRACTOR by a Subcontractor will be pursuant to an appropriate agreement between CONTRACTOR and the Subcontractor which specifically binds the Subcontractor to the applicable terms and conditions of the Contract Documents for the benefit of OWNER and CONSULTANT.

5.8.6 Statements and Comments by CONTRACTOR

Neither the CONTRACTOR, his employees, nor his subcontractors shall at any time make any statement or comment as

to the project scope, nature, intention, design, or construction method to any third party or parties without the explicit written consent of the OWNER.

Any third party requesting such information shall be referred to the OWNER or his representative.

Should there be any change from the original intent of the project as a result of any statement or comment by the contractor, his employees or subcontractors, contractor shall be held liable for any change in the scope, nature, design, or construction method and shall bear the full cost for the previously mentioned changes.

5.9 Patent Fees and Royalties

CONTRACTOR shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product or device which is the subject of patent rights or copyrights held by others.

5.10 Permits

Unless otherwise provided in the Special conditions, CONTRACTOR shall obtain and pay for all construction permits and licenses. OWNER shall assist CONTRACTOR, when necessary, in obtaining such permits and licenses. CONTRACTOR shall pay all governmental charges and inspection fees necessary for the prosecution of the Work, which are applicable at the time of opening of Bids, or if there are no Bids on the Effective Date of the Agreement. CONTRACTOR shall pay all charges of utility owners for connections to the Work, and OWNER shall pay all charges of such utility owners for capital costs related thereto such as plant investment fees.

5.11 Laws and Regulations

5.11.1 CONTRACTOR to Comply

CONTRACTOR shall give all notices and comply with all Laws and Regulations applicable to furnishing and performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither OWNER nor CONSULTANT shall be responsible for monitoring CONTRACTOR'S compliance with any Laws and Regulations.

5.11.2 Specifications and Drawings at Variance

If CONTRACTOR observes that the Specifications or Drawings are at variance with any Laws or Regulations, CONTRACTOR shall give CONSULTANT prompt written notice thereof, and any necessary changes will be authorized by one of the methods indicated in paragraph 3.4. If CONTRACTOR performs any Work knowing or having reason to know that it is contrary to such Laws, or Regulations, and without such notice to CONSULTANT, CONTRACTOR shall bear all costs arising therefrom; however, it shall not be CONTRACTOR'S primary responsibility to make certain that the Specifications and Drawings are in accordance with such Laws and Regulations.

Any party, firm or individual submitting a proposal pursuant to invitation must have paid all taxes owed to the Lexington-Fayette Urban County Government at the time the proposal is submitted, and must maintain a "current" status in regard to those taxes throughout the Contract. If applicable, business must be licensed in Fayette County.

5.12 Taxes

CONTRACTOR shall pay all sales, consumer, use and other similar taxes required to be paid by CONTRACTOR in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work. Any party, firm or individual submitting a proposal pursuant to invitation must have paid all taxes owed to the Lexington-Fayette Urban County Government at the time the proposal is submitted, and must maintain a "current" status in regard to those taxes throughout the Contract. If applicable, business must be licensed in Fayette County.

5.13 Use of Premises

5.13.1 Project Site

CONTRACTOR shall confine construction equipment, the storage of materials and equipment and the operations of workers to the staging areas or work site areas identified in and permitted by the Contract Documents and other land and areas permitted by Laws and Regulations, rights-of-way, permits and easements, and shall not unreasonably encumber the premises with construction equipment or other materials or equipment. CONTRACTOR shall assume full responsibility for any damage to any such

land or area, or to the owner or occupant thereof or of any land or areas contiguous thereto, resulting from the performance of the Work. Should any claim be made against OWNER or CONSULTANT by any such owner or occupant because of the performance of the Work, CONTRACTOR shall promptly attempt to settle with such other party by agreement or otherwise resolve the claim by arbitration or at law. CONTRACTOR shall, to the fullest extent permitted by Laws and Regulations, indemnify and hold OWNER and CONSULTANT harmless from and against all claims, damages, losses and expenses (including, but not limited to, fees of engineers, architects, attorneys and other professionals and court and arbitration costs) arising directly, indirectly or consequentially out of any action, legal or equitable, brought by any such other party against OWNER or CONSULTANT to the extent based on a claim arising out of CONTRACTOR'S performance of the Work.

5.13.2 Clean UP

During the progress of the Work, CONTRACTOR shall keep the premises free from accumulations of waste materials, rubbish and other debris resulting from the Work. At the completion of the Work, CONTRACTOR shall remove all waste materials, rubbish and debris from and about the premises as well as all tools, appliances, construction equipment and machinery, and surplus materials, and shall leave the site clean and ready for occupancy by OWNER. CONTRACTOR shall restore to original condition all property not designated for alteration by the Contract Documents.

5.13.1 Loading of Structures

CONTRACTOR shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall CONTRACTOR subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

5.14 Record Drawings

CONTRACTOR shall maintain in a safe place at the site one record copy of all Drawings, Specifications, Addenda, Change Orders, Field Orders and written interpretations and clarifications (issued pursuant to paragraph 9.4) in good order and annotated to show all changes made during construction. These record documents together with all approved samples and a counterpart of all approved Shop Drawings will be available to CONSULTANT for reference. Upon completion of the Work, these record documents, samples and Shop Drawings will be delivered to CONSULTANT for OWNER.

5.15 Shop Drawings and Samples

5.15.1 Shop Drawing Submittals

After checking and verifying all field measurements and after complying

with applicable procedures specified, CONTRACTOR shall submit to CONSULTANT for review and approval in accordance with the accepted schedule of Shop Drawing submissions (see paragraph 2.8), or for other appropriate action if so indicated in the Special Conditions, five copies (unless otherwise specified) of all Shop Drawings, which will bear a stamp or specific written indication that CONTRACTOR has satisfied CONTRACTOR'S responsibilities under the Contract Documents with respect to the review of the submission. All submissions will be identified as CONSULTANT may require. The data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials and similar data to enable CONSULTANT to review the information as required.

5.15.2 Sample Submittals

CONTRACTOR shall also submit to CONSULTANT for review and approval with such promptness as to cause no delay in Work, all samples required by the Contract Documents. All samples will have been checked by and accompanied by a specific written indication that CONTRACTOR has satisfied CONTRACTOR'S responsibilities under the Contract Documents with respect to the review of the submission and will be identified clearly as to material, Supplier, pertinent data such as catalog numbers and the use for which intended.

5.15.3 Review by CONTRACTOR

Before submission of each Shop Drawing or sample CONTRACTOR shall have determined and verified all quantities, dimensions, specified performance criteria, installation requirements, materials, catalog numbers and similar data with respect thereto and reviewed or coordinated each Shop Drawing or sample with other Shop Drawings and samples and with the requirements of the Work and the Contract Documents.

5.15.4 Notice of Variation

At the time of each submission, CONTRACTOR shall give CONSULTANT specific written notice of each variation that the Shop Drawings or samples may have from the requirements of the Contract Documents, and, in addition, shall cause a specific notation to be made on each Shop Drawing submitted to CONSULTANT for review and approval of each such variation.

5.15.5 CONSULTANT'S Approval

CONSULTANT will review and approve with reasonable promptness Shop Drawings and samples, but CONSULTANT'S review and approval will be only for conformance with the design concept of the Project and for compliance with the information given in the Contract Documents and shall not extend to means, methods, techniques, sequences or procedures of construction (except where a specific means, method, technique, sequence or

procedure of construction is indicated in or required by the Contract Documents) or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions. CONTRACTOR shall make corrections required by CONSULTANT, and shall return the required number of corrected copies of Shop Drawings and submit, as required, new samples for review and approval. CONTRACTOR shall direct specific attention in writing to revisions other than the corrections called for by CONSULTANT on previous submittals.

5.15.6 Responsibility for Errors and Omissions

CONSULTANT'S review and approval of Shop Drawings or samples shall not relieve CONTRACTOR from responsibility for any variation from the requirements of the Contract Documents unless CONTRACTOR has in writing called CONSULTANT'S attention to each such variation at the time of submission as required by paragraph 5.15.4 and CONSULTANT has given written approval of each such variation by a specific written notation thereof incorporated in or accompanying the Shop Drawing or sample approval; nor will any approval by CONSULTANT relieve CONTRACTOR from responsibility for errors or omissions in the Shop Drawings or from responsibility for having complied with the provisions of paragraph 5.15.3.

5.15.7 Cost of Related Work

Where a Shop or sample is required by the Specifications, any related Work performed prior to CONSULTANT'S review and approval of the pertinent submission will be the sole expense and responsibility of CONTRACTOR.

5.16 Continuing the Work

CONTRACTOR shall carry on the Work and adhere to the progress schedule during all disputes or disagreements with OWNER. No Work shall be delayed or postponed pending resolutions of any disputes or disagreements, except as permitted by paragraph 14.5 or as CONTRACTOR and OWNER may otherwise agree in writing.

5.17 Erosion and Sediment Control

5.17.1 General Environmental Requirements

The CONTRACTOR and Subcontractors performing work on projects on behalf of the OWNER shall comply with all applicable federal, state, and local environmental regulations and all requirements and conditions set forth in "special" permits including but not limited to Corp of Engineers 404 permits, 401 Water Quality Certifications, Stream Crossing and Floodplain Encroachment Permits.

Any fines or penalties resulting from the failure to comply with the terms of the federal, state or local permits or perform necessary corrective action are solely the obligation of the CONTRACTOR.

5.17.2 Stormwater Pollution Prevention

A. The CONTRACTOR shall exercise due care to prevent or minimize any damage to any stream or wetland from pollution by debris, sediment or other material. The operation of equipment and/or materials in a jurisdictional wetland is expressly prohibited. Water that has been used for washing or processing, or that contains oils, sediments or other pollutants shall not be discharged from the job site. Such waters shall be collected and properly disposed of by the CONTRACTOR in accordance with applicable local, state and federal law.

B. The CONTRACTOR is solely responsible for securing all required state and local permits associated with stormwater discharges from the project including, but not necessarily limited to the KY Notice of Intent to Disturb (NOI) for Coverage of Storm Water Discharges Associated with Construction Activities under the KPDES Storm Water General Permit KYR100000 and the LFUCG, Land Disturbance Permit. Permit application preparation and all required documentation are the responsibility of the CONTRACTOR. The CONTRACTOR is solely responsible for maintaining compliance with the stormwater pollution prevention plan or erosion and sediment control plan and ensuring the following:

- a. That the Stormwater Pollution Prevention Plan (SWPPP) or erosion control plan is current and available for review on site;
- b. That any and all stormwater inspection reports required by the permit are conducted by qualified personnel and are available for review onsite; and
- c. That all best management practices (BMPs) are adequately maintained and effective at controlling erosion and preventing sediment from leaving the site.

C. The CONTRACTOR shall provide the necessary equipment and personnel to perform any and all emergency measures that may be required to contain any spillage or leakage and to remove materials, soils or liquids that become contaminated. The collected spill material shall be properly disposed at the CONTRACTOR's expense.

D. Upon completion of the work and with the concurrence of the OWNER, the CONTRACTOR must file a Notice of Termination (NOT) of Coverage Under the KPDES General Permit for Storm Water Discharges Associated with Construction Activity with the appropriate local and state authorities.

E. Any fines or penalties resulting from the failure to comply with the terms of the state or local stormwater permits or perform necessary corrective action are solely the obligation of the CONTRACTOR.

6. OTHER WORK

6.1 Related Work at Site

OWNER may perform other work related to the Project at the site by OWNER'S own forces, have other work performed by utility owners or let other direct contracts therefor which shall contain General Conditions similar to these. If the fact that such other work is to be performed was not noted in the Contract Documents, written notice thereof will be given to CONTRACTOR prior to starting any such other work; and, if such performance will involve additional expense to CONTRACTOR or requires additional time, a Change Order to the Contract will be negotiated.

6.2 Other Contractors or Utility Owners

CONTRACTOR shall afford each utility owner and other contractor who is a party to such a direct contract (or OWNER, if OWNER is performing the additional work with OWNER'S employees) proper and safe access to the site and a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such work, and shall properly connect and coordinate the Work with theirs. CONTRACTOR shall do all cutting, fitting and patching of the Work that may be required to make its several parts come together properly and integrate with such other work. CONTRACTOR shall not endanger any work of others by cutting, excavating or otherwise altering their work and will only cut or alter their work with the written consent of CONSULTANT and the others whose work will be affected. The duties and responsibilities of CONTRACTOR under this paragraph are for the benefit of such utility owners and other contractors to the extent that there are comparable provisions for the benefit of CONTRACTOR in said direct contracts between OWNER and such utility owners and other contractors.

6.3 Delays Caused by Others

If any part of CONTRACTOR'S Work depends for proper execution or results upon the work of any such other contractor or utility owner (or OWNER), CONTRACTOR shall inspect and promptly report to CONSULTANT in writing any delays, defects or deficiencies in such work that render it unavailable or unsuitable for such proper execution and results. CONTRACTOR'S failure so to report will constitute an acceptance of the other work as fit and proper for integration with CONTRACTOR'S Work except for latent or non-apparent defects and deficiencies in the other work.

6.4 Coordination

If OWNER contracts with others for the performance of other work on the Project at the site, the person or organization who will have authority and responsibility for coordination of the activities among the various prime contractors will be identified in the Special Conditions, and the specific matters to be covered by such authority and

responsibility will be itemized, and the extent of such authority and responsibilities will be provided, in the Special Conditions.

7. OWNER'S RESPONSIBILITIES

7.1 Communications

OWNER shall issue all communications to CONTRACTOR through CONSULTANT.

7.2 Data and Payments

OWNER shall furnish the data required of OWNER under the Contract Documents promptly after they are due.

7.3 Lands, Easements, and Surveys

OWNER'S duties in respect of providing lands and easements and providing engineering surveys to establish reference points are set forth in paragraphs 4.1 and 4.4. Paragraph 4.2 refers to OWNER'S identifying and making available to CONTRACTOR copies of reports of explorations and tests of subsurface conditions at the site and in existing structures which have been utilized by CONSULTANT in preparing the Drawings and Specifications.

7.4 Change Orders

OWNER is obligated to execute Change Orders as indicated in paragraph 9.4.

7.5 Inspections, Tests and Approvals

OWNER'S responsibility in respect to certain inspections, tests and approvals is set forth in paragraph 13.3.

7.6 Stop or Suspend Work

In connection with OWNER'S right to stop Work or suspend Work, see paragraph 12.4 and 14.1 Paragraph 14.2 deals with OWNER'S rights to terminate services of CONTRACTOR under certain circumstances.

8. CONSULTANT'S STATUS DURING CONSTRUCTION

8.1 OWNER'S Representative

CONSULTANT will be OWNER'S representative during the construction period. The duties and responsibilities and the limitations of authority of CONSULTANT as OWNER'S representative during construction are set forth in the Contract Documents and shall not be extended without written consent of OWNER and CONSULTANT.

8.2 Visits to Site

CONSULTANT will make visits to the site at intervals appropriate to the various stages of construction to observe the progress and quality of the executed Work and to determine, in general, if the Work is proceeding in accordance with the Contract Documents. CONSULTANT will not be required to make exhaustive or

continuous on-site inspections to check the quality or quantity of the Work. CONSULTANT'S efforts will be directed toward providing for OWNER a greater degree of confidence that the completed Work will conform to the Contract Documents. On the basis of such visits and on-site observations, CONSULTANT will keep OWNER informed of the progress of the Work and will endeavor to guard OWNER against defects and deficiencies in the Work.

8.3 Project Representation

CONSULTANT will provide an Inspector to assist CONSULTANT in observing the performance of the Work. If OWNER designates another agent to represent OWNER at the site who is not CONSULTANT'S agent or employee, the duties, responsibilities and limitations of authority of such other person will be as provided in the Special Conditions.

8.4 Clarifications and Interpretations

CONSULTANT will issue with reasonable promptness such written clarifications or interpretations of the requirements of the Contract Documents (in the form of Drawings or otherwise) as CONSULTANT may determine necessary, which shall be consistent with or reasonably inferable from the overall intent of the Contract Documents.

8.5 Authorized Variations in Work

CONSULTANT may authorize minor variations in the Work from the requirements of the Contract Documents which do not involve an adjustment in the Contract Price or the Contract Time and are consistent with the overall intent of the Contract Documents. These may be accomplished by a Field Order.

8.6 Rejecting Defective Work

CONSULTANT will have authority to disapprove or reject Work which CONSULTANT believes to be defective, and will also have authority to require special inspection or testing of the Work as provided in paragraph 12.3, whether or not the Work is fabricated, installed or completed.

8.7 Shop Drawings

In connection with CONSULTANT'S responsibility for Shop Drawings and samples, see paragraphs 5.15.1 through 5.16 inclusive.

8.8 Change Orders

In connection with CONSULTANT'S responsibilities as to Change Orders, see Articles 10, 11 and 12.

8.9 Payments

In connection with CONSULTANT'S responsibilities with respect to Applications for Payment, etc., see Article 13.

8.10 Determinations for Unit Prices

CONSULTANT will determine the actual quantities and classifications of Unit Price Work performed by CONTRACTOR.

CONSULTANT will review with CONTRACTOR CONSULTANT'S preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise).

8.11 Decision on Disputes

CONSULTANT will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work thereunder. Claims, disputes and other matters relating to the acceptability of the Work or the interpretation of the requirements of the Contract Documents pertaining to the performance and furnishing of the Work and claims under Articles 10 and 11 in respect of changes in the Contract Price or Contract Time will be referred initially to CONSULTANT in writing with a request for a formal decision in accordance with this paragraph, which CONSULTANT will render in writing within a reasonable time. Written notice of each such claim, dispute and other matter will be delivered to CONSULTANT promptly (but in no event later than thirty days) after the occurrence of the event giving rise thereto, and written supporting data will be submitted to CONSULTANT within sixty days after such occurrence unless CONSULTANT allows an additional period of time to ascertain more accurate data in support of the claim.

8.12 Limitations on CONSULTANT's Responsibilities

8.12.1 CONTRACTOR, Supplier, or Surety

Neither CONSULTANTS authority to act under this Article 8 or elsewhere in the Contract Documents nor any decision made by CONSULTANT in good faith either to exercise or not exercise such authority shall give rise to any duty or responsibility of CONSULTANT to CONTRACTOR, any Subcontractor, any Supplier, or any other person or organization performing any of the Work, or to any surety for any of them.

8.12.2 To Evaluate the Work

Whenever in the Contract Documents the terms "as ordered", "as directed", "as required", "as allowed", "as approved" or terms of like effect or import are used, or the adjectives "reasonable", "suitable", "acceptable", "proper", or "satisfactory" or adjectives or like "effect" or "import" are used to describe a requirement, direction, review or judgment of CONSULTANT as to the Work, it is intended that such requirement, direction, review or judgment will be solely to evaluate the Work for compliance with the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective shall not be effective to assign CONSULTANT any duty or authority to supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of paragraph 8.12.3 or 8.12.4.

8.12.3 CONTRACTOR'S Means, Methods, Etc.

CONSULTANT will not be responsible for CONTRACTOR'S means, methods, techniques, sequences or procedures of construction, or the safety precautions and programs incident thereto, and CONSULTANT will not be responsible for CONTRACTOR'S failure to perform or furnish the Work in accordance with the Contract Documents.

8.12.4 Acts of Omissions of CONTRACTOR

CONSULTANT will not be responsible for the acts or omissions of CONTRACTOR or of any Subcontractor, any Supplier, or of any other person or organization performing or furnishing any of the Work.

9. CHANGES IN THE WORK

9.1 OWNER May Order Change

Without invalidating the Agreement and without notice to any surety, OWNER may, at any time or from time to time, order additions, deletions or revisions in the Work; these will be authorized by a Change Order. Upon receipt of such notice, CONTRACTOR shall promptly proceed with the Work involved which will be performed under the applicable conditions of the Contract Documents (except as otherwise specifically provided).

9.2 Claims

Claims for an increase or decrease in the Contract Price or an extension or shortening of the Contract Time that should be allowed as a result of a Change Order will be settled as provided for in Article 10 or Article 11.

9.3 Work Not in Contract Documents

CONTRACTOR shall not be entitled to an increase in the Contract Price or an extension of the Contract Time with respect to any Work performed that is not required by the Contract Documents as amended, modified and supplemented as provided in paragraph 3.4, except in the case of an emergency and except in the case of uncovering Work as provided in paragraph 12.3.4.

9.4 Change Orders

OWNER and CONTRACTOR shall execute appropriate Change Orders covering:

9.4.1 changes in the Work which are ordered by OWNER pursuant to paragraph 9.1, are required because of acceptance of defective Work under paragraph 12.7 or corrective defective Work under paragraph 12.8, or are agreed to by the parties;

9.4.2 changes in the Contract Price or Contract Time which are agreed to by the parties; and

9.4.3 changes in the Contract Price or Contract Time which embody the substance of any written decision rendered by CONSULTANT pursuant to paragraph 8.11; provided that, in lieu of executing any such Change Order, an appeal may be taken from any such decision in accordance with the provisions of the Contract Documents and applicable Laws and REGULATIONS, but during any such appeal, CONTRACTOR shall carry on the Work and adhere to the progress schedule as provided in paragraph 5.16.

9.5 Notice of Change

If notice of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Time) is required by the provisions of any Bond to be given to a surety, the giving of any such notice will be CONTRACTOR'S responsibility, and the amount of each applicable Bond will be adjusted accordingly.

10. CHANGE OF CONTRACT PRICE

10.1 Total Compensation

The Contract Price constitutes the total compensation (subject to authorized adjustments) payable to CONTRACTOR for performing the Work. All duties, responsibilities and obligations assigned to or undertaken by CONTRACTOR shall be at his expense without change in the Contract Price.

10.2 Claim for Increase or Decrease in Price

The Contract Price may only be changed by a Change Order. Any claim for an increase or decrease in the Contract Price shall be based on written notice delivered by the CONTRACTOR to the CONSULTANT promptly (but in no event later than thirty days) after the occurrence of the event giving rise to the claim and stating the general nature of the claim. Notice of the amount of the claim with supporting data shall be delivered within sixty days after such occurrence (unless CONSULTANT allows an additional period of time to ascertain more accurate data in support of the claim) and shall be accompanied by CONTRACTOR'S written statement that the amount claimed covers all known amounts (direct, indirect, and consequential) to which the CONTRACTOR is entitled as a result of the occurrence of said event.

10.3 Value of Work

The value of any Work covered by a Change Order or of any claim for an increase or decrease in the Contract Price shall be determined in one of the following ways:

10.3.1 Unit Prices

Where the Work involved is covered by unit prices contained in the Contract Documents, by application of unit prices to the quantities of

the items involved (subject to the provisions of paragraphs 10.9.1. through 10.9.3, inclusive).

10.3.2 Lump Sum

By mutual acceptance of a lump sum (which may include an allowance for overhead and profit not necessarily in accordance with paragraph 10.6.2.1).

10.3.3 Cost Plus Fee

On the basis of the Cost of the Work (determined as provided in paragraphs 10.4 and 10.5) plus a CONTRACTOR'S fee for overhead and profit (determined as provided in paragraphs 10.6 and 10.7).

10.4 Cost of the Work

The term Cost of the Work means the sum of all costs necessarily incurred and paid by CONTRACTOR in the proper performance of the Work. Except as otherwise may be agreed to in writing by OWNER, such costs shall be in amounts no higher than those prevailing in the locality of the Project; shall include only the following items; and shall not include any of the costs itemized in paragraph 10.5:

10.4.1 Payroll Costs

Payroll costs for employees in the direct employ of CONTRACTOR in the performance of the Work under schedules of job classifications agreed upon by OWNER and CONTRACTOR. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits which shall include social security contributions, unemployment, excise and payroll taxes, workers' or workmen's compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday pay applicable thereto. Such employees shall include superintendents and foremen at the site. The expenses of performing Work after regular working hours, on Saturday, Sunday or legal holidays, shall be included in the above to the extent authorized by OWNER.

10.4.2 Materials and Equipment Costs

Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to CONTRACTOR unless OWNER deposits funds with CONTRACTOR with which to make payments, in which case the cash discounts shall accrue to OWNER. All trade discounts, rebates and refunds and all returns from sale of surplus materials and equipment shall accrue to OWNER, and CONTRACTOR shall make provisions so that they may be obtained.

10.4.3 Subcontractor Costs

Payments made by CONTRACTOR to the Subcontractors for Work performed by Subcontractors. If required by OWNER, CONTRACTOR shall obtain competitive bids from Subcontractors acceptable to CONTRACTOR and shall deliver such bids to OWNER who will then determine, with the advice of CONSULTANT, which bids will be accepted. If a subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work Plus a Fee, the Subcontractor's Cost of the Work shall be determined in the same manner as CONTRACTOR'S Cost of the Work. All subcontracts shall be subject to the other provisions of the Contract Documents insofar as applicable.

10.4.4 Special Consultant Costs

Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys and accountants) employed for services specifically related to the Work.

10.4.5 Supplemental Costs

10.4.5.1 The proportion of necessary transportation, travel and subsistence expenses of CONTRACTOR'S employees incurred in discharge of duties connected with the Work.

10.4.5.2 Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office and temporary facilities at the site and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost less market value of such items used but not consumed which remain the property of CONTRACTOR.

10.4.5.3 Rentals of all construction equipment and machinery and the parts thereof whether rented from CONTRACTOR or others in accordance with rental agreements approved by OWNER with the advice of CONSULTANT, and the costs of transportation, loading, unloading, installation, dismantling and removal shall be in accordance with terms of said rental agreements. The rental of any such equipment, machinery or parts shall cease when the use thereof is no longer necessary for the Work.

10.4.5.4 Sales, consumer, use or similar taxes related to the Work, and for which CONTRACTOR is liable, imposed by Laws and Regulations.

10.4.5.5 Deposits lost for causes other than negligence of CONTRACTOR, any Subcontractor or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.

10.4.5.6 Losses and damages (and related expenses), not compensated by insurance or otherwise, to the Work or otherwise sustained by CONTRACTOR in connection with the performance and furnishing of the Work (except losses and damages within the deductible amounts of property insurance established by OWNER), provided they have resulted from causes other than the negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of OWNER. No such losses, damages and expenses shall be included in the Cost of the Work for the purpose of determining CONTRACTOR'S fee. If, however, any such loss or damage requires reconstruction and CONTRACTOR is placed in charge thereof, CONTRACTOR shall be paid a fee proportionate to that stated in paragraph 10.6.2 for services.

10.4.5.7 The cost of utilities, fuel and sanitary facilities at the site.

10.4.5.8 Minor expenses such as telegrams, long distance telephone calls, telephone service at the site, expressage and similar petty cash items in connection with the Work.

10.4.5.9 Cost of premiums for additional Bonds and insurance required because of changes in the Work and premiums for property insurance coverage within the limits of the deductible amounts established by OWNER.

10.5 Not to Be Included in Cost of the Work

The term Cost of the Work shall not include any of the following:

10.5.1 Costs of Officers and Executives

Payroll costs and other compensation of CONTRACTOR'S officers, executives, principals (of partnership and sole proprietorships), general

managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks and other personnel employed by CONTRACTOR whether at the site or in CONTRACTOR'S principal or a branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in paragraph 10.4.1 or specifically covered by paragraph 10.4.4 - all of which are to be considered administrative costs covered by the CONTRACTOR'S fee.

10.5.2 Principal Office

Expenses of CONTRACTOR'S principal and branch offices other than CONTRACTOR'S office at the site.

10.5.3 Capital Expense

Any part of CONTRACTOR'S capital expenses, including interest on CONTRACTOR'S capital employed for the Work and charges against CONTRACTOR for delinquent payments.

10.5.4 Bonds and Insurance

Cost of premiums for all Bonds and for all insurance whether or not CONTRACTOR is required by the Contract Documents to purchase and maintain the same (except for the cost of premiums covered by subparagraph 10.4.5.9 above).

10.5.5 Costs Due to Negligence

Costs due to the negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied and making good any damage to property.

10.5.6 Other Costs

Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in paragraph 10.4.

10.6 Contractor's Fee

The CONTRACTOR'S Fee allowed to CONTRACTOR for overhead and profit shall be determined as follows:

10.6.1 a mutually acceptable fixed fee; or if none can be agreed upon,

10.6.2 a fee based on the following percentages of the various portions of the Cost of the Work:

10.6.2.1 for costs incurred under paragraphs 10.4.1 and 10.4.2, the CONTRACTOR'S fee shall be fifteen percent;

10.6.2.2 for costs incurred under paragraph 10.4.3, the CONTRACTOR'S fee shall be five percent; and if a subcontract is on the basis of Cost of the Work Plus a fee, the maximum allowable to CONTRACTOR on account of overhead and profit of all Subcontractors shall be fifteen percent;

10.6.2.3 no fee shall be payable on the basis of costs itemized under paragraphs 10.4.4, 10.4.5 and 10.5;

10.6.2.4 the amount of credit to be allowed by CONTRACTOR to OWNER for any such change which results in a net decrease in cost will be the amount of the actual net decrease plus a deduction in CONTRACTOR'S Fee by an amount equal to ten percent of the net decrease; and

10.6.2.5 when both additions and credits are involved in any one change, the adjustment in CONTRACTOR'S fee shall be computed on the basis of the net change in accordance with paragraphs 10.6.2.1 through 10.6.2.4, inclusive.

10.7 Itemized Cost Breakdown

Whenever the cost of any Work is to be determined pursuant to paragraph 10.4 or 10.5, CONTRACTOR will submit in form acceptable to CONSULTANT an itemized cost breakdown together with supporting data.

10.8 Cash Allowances

It is understood that CONTRACTOR has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be done by such Subcontractors or Suppliers and for such sums within the limit of the allowances as may be acceptable to CONSULTANT, CONTRACTOR agrees that:

10.8.1 Materials and Equipment

The allowances include the cost to CONTRACTOR (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the site, and all applicable taxes; and

10.8.2 Other Costs

CONTRACTOR'S costs for unloading and handling on the site, labor, installation costs, overhead, profit and other expenses contemplated for the allowances have been included in the Contract Price and not in the allowances. No demand for additional payment on account of any thereof will be valid.

10.8.3 Change Order

Prior to final payment, an appropriate Change Order will be issued as recommended by CONSULTANT to reflect actual amounts due CONTRACTOR on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

10.9 Unit Price Work

10.9.1 General

Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the established unit prices for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Determinations of the actual quantities and classifications of Unit Price Work performed by CONTRACTOR will be made by CONSULTANT in accordance with Paragraph 8.10.

10.9.2 Overhead and Profit

Each unit price will be deemed to include an amount considered by CONTRACTOR to be adequate to cover CONTRACTOR'S overhead and profit for each separately identified item.

10.9.3 Claim for Increase in Unit Price

Where the quantity of any item of Unit Price Work performed by CONTRACTOR differs materially and significantly from the estimated quantity of such item indicated in the Agreement and there is no corresponding adjustment with respect to any other item of Work and if CONTRACTOR believes that CONTRACTOR has incurred additional expense as a result thereof, CONTRACTOR may make a claim for an increase in the Contract Price in accordance with Article 10.

11. CHANGE OF CONTRACT TIME

11.1 Change Order

The Contract Time may only be changed by a Change Order. Any claim for an extension or shortening of the Contract Time shall be based on written notice delivered to CONSULTANT promptly (but in no event later than thirty days) after the occurrence of the event giving rise to the claim and stating the general nature of the claim. Notice of the extent of the claim with supporting data shall be delivered within sixty days after such occurrence (unless CONSULTANT allows an additional period of time to ascertain more accurate data in support of the claim) and shall be accompanied by the claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant has reason to believe it is entitled as a result of the occurrence of said event. All claims for adjustment in the Contract Time shall be determined by CONSULTANT in accordance with paragraph 8.11. No claim for an adjustment in the Contract Time will be valid if not submitted in accordance with the requirements of this paragraph 11.1.

11.2 Justification for Time Extensions

The Contract Time will be extended in an amount equal to time lost due to delays beyond the control of CONTRACTOR if a claim is made therefore as provided in paragraph 11.1. Such delays shall include, but not be limited to, acts or neglect by OWNER or others performing additional work as contemplated by Article 6, or to fires, floods, labor disputes, epidemics, abnormal weather conditions or acts of God.

11.3 Time Limits

All time limits stated in the Contract Documents are of the essence of the Agreement. The provisions of this Article 11 shall not exclude recovery for damages (including but not limited to fees and charges of engineers, architects, attorneys and other professionals and court costs) for delay by either party.

12. WARRANTY AND GUARANTEE; TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

12.1 Warranty and Guarantee

CONTRACTOR warrants and guarantees to OWNER and CONSULTANT that all Work will be in accordance with the Contract Documents and will not be defective. All defective Work, whether or not in place, may be rejected, corrected or accepted as provided in this Article 12.

12.2 Access to Work

CONSULTANT and CONSULTANT'S representatives, other representatives of OWNER, testing agencies and governmental agencies with jurisdictional interests will have access to the Work at reasonable times for their observation, inspecting and testing. CONTRACTOR shall provide proper and safe conditions for such access.

12.3 Tests and Inspections

12.3.1 Timely Notice

CONTRACTOR shall give CONSULTANT timely notice of readiness of the Work for all required inspections, tests or approvals.

12.3.2 Requirements and Responsibilities

The CONSULTANT may require such inspection and testing during the course of the Work as he/she deems necessary to ascertain and assure the integrity and acceptable quality of the materials incorporated and the work performed. Inspection presence may be either full-time or intermittent, and neither the presence nor absence at any time of the CONSULTANT or the INSPECTOR shall relieve the CONTRACTOR of sole responsibility for the acceptability and integrity of the Work or any part thereof.

The costs of sampling, testing, and inspection on-site to ascertain acceptability of the Work and materials will be borne by the OWNER except as otherwise provided. The OWNER will select a testing laboratory to perform such sampling and testing. Sampling and/or testing required by the CONTRACTOR or necessitated by failure of Work or materials to meet the above acceptability test shall be at the expense of the CONTRACTOR.

Inspection services may be performed by the employees of the OWNER or by others selected or designated by the OWNER or the CONSULTANT.

Sampling and/or testing required for manufacturing quality and/or process control, for certification that raw mineral materials or manufactured products are the quality specified in the contract, or to assure the acceptability for incorporation into the Work shall be borne by the CONTRACTOR or the material supplier.

Cost for inspection, sampling, testing, and approvals required by the laws or regulations of any public body having competent jurisdiction shall be borne by the CONTRACTOR or the material supplier.

Sampling and testing will be in accord with pertinent codes and regulations and with appropriate standards of the American Society of Testing Materials or other specified standards.

12.3.3 On-Site Construction Test and Other Testing

All inspections, tests or approvals other than those required by Laws or Regulations of any public body having jurisdiction shall be performed by organizations acceptable to OWNER and CONTRACTOR (or by CONSULTANT if so specified).

12.3.4 Covered Work

If any Work (including the work of others) that is to be inspected, tested or approved is covered without written concurrence of CONSULTANT, it must, if requested by CONSULTANT, be uncovered for observation. Such uncovering shall be at CONTRACTOR'S expense unless CONTRACTOR has given CONSULTANT timely notice of CONTRACTOR'S intention to cover the same and CONSULTANT has not acted with reasonable promptness in response to such notice.

12.3.5 CONTRACTOR'S Obligation

Neither observations by CONSULTANT nor inspections, tests or approvals by others shall relieve CONTRACTOR from CONTRACTOR'S obligations to perform the Work in accordance with the Contract Documents.

12.4 OWNER May Stop the Work

If the Work is defective, or CONTRACTOR fails to supply sufficient skilled workers or suitable materials or equipment, or fails to furnish or perform the Work in such a way that the completed Work will conform to the Contract Documents, OWNER may order CONTRACTOR to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of OWNER to stop the Work shall not give rise to any duty on the part of OWNER to exercise this right for the benefit of CONTRACTOR or any other party.

12.5 Correction or Removal of Defective Work

If required by CONSULTANT, CONTRACTOR shall promptly, as directed, either correct all defective Work, whether or not fabricated, installed or completed, or, if the Work has been rejected by CONSULTANT, remove it from the site and replace it with non-defective Work. CONTRACTOR shall bear all direct, indirect and consequential costs of such correction or removal (including but not limited to fees and charges of engineers, architects, attorneys and other professionals) made necessary thereby.

12.6 One Year Correction Period

If within one year after the date of Completion or such longer period of time as may be prescribed by Laws or Regulations or by the terms of any applicable special guarantee required by the Contract Documents or by any specific provision of the Contract Documents, any Work is found to be defective, CONTRACTOR shall promptly, without cost to OWNER and in accordance with OWNER'S written instructions, either correct such defective Work, or, if it has been rejected by OWNER, remove it from the site and replace it with non-defective Work. If CONTRACTOR does not promptly comply with the terms of such instructions, or in an emergency where delay would cause serious risk of loss or damage, OWNER may have the defective Work corrected or the rejected Work removed and replaced, and all direct, indirect and consequential costs of such removal and replacement

(including but not limited to fees and charges of engineers, architects, attorneys and other professionals) will be paid by CONTRACTOR. In special circumstances where a particular item of equipment is placed in continuous service before Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications or by Change Order.

12.7 Acceptance of Defective Work

If, instead of requiring correction or removal and replacement of defective Work, OWNER prefers to accept it, OWNER may do so. CONTRACTOR shall bear all direct, indirect and consequential costs attributable to OWNER'S evaluation of and determination to accept such defective Work (such costs to be approved by CONSULTANT as to reasonableness and to include but not be limited to fees and charges of engineers, architects, attorneys and other professionals).

12.8 OWNER May Correct Defective Work

If CONTRACTOR fails within a reasonable time after written notice of CONSULTANT to proceed to correct and to correct defective Work or to remove and replace rejected Work as required by CONSULTANT in accordance with paragraph 12.5, or if CONTRACTOR fails to perform the Work in accordance with the Contract Documents, or if CONTRACTOR fails to comply with any other provision of the Contract Documents, OWNER may, after seven days' written notice to CONTRACTOR, correct and remedy any such deficiency. In exercising the rights and remedies under this paragraph OWNER shall proceed expeditiously. To the extent necessary to complete corrective and remedial action, OWNER may exclude CONTRACTOR from all or part of the site, take possession of all or part of the Work, and suspend CONTRACTOR'S services related thereto, take possession of CONTRACTOR'S tools, appliances, construction equipment and machinery at the site and incorporate in the Work all materials and equipment stored at the site or for which OWNER has paid CONTRACTOR but which are stored elsewhere. CONTRACTOR shall allow OWNER, OWNER'S representatives, agents and employees such access to the site as may be necessary to enable OWNER to exercise the rights and remedies under this paragraph. All direct, indirect and consequential costs of OWNER in exercising such rights and remedies will be charged against CONTRACTOR in an amount approved as to reasonableness by CONSULTANT, and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and OWNER shall be entitled to an appropriate decrease in the Contract Price. Such direct, indirect and consequential costs will include but not be limited to fees and charges of engineers, architects, attorneys and other professionals, all court costs and all costs of repair and replacement of work of others destroyed or damaged by correction, removal or replacement of CONTRACTOR'S defective Work. CONTRACTOR shall not be allowed an extension of the Contract Time because of any delay in performance of the Work attributable to the exercise by OWNER of OWNER'S rights and remedies hereunder.

13. PAYMENTS TO CONTRACTOR AND COMPLETION

13.1 Schedule of Values

The schedule of values established as provided in paragraph 2.8 will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to CONSULTANT. Progress payments on account of Unit Price Work will be based on the number of units completed.

13.2 Application for Progress Payment

At least ten days before each progress payment is scheduled (but not more often than once a month), CONTRACTOR shall submit to CONSULTANT for review an Application for Payment filled out and signed by CONTRACTOR covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice or other documentation warranting that OWNER has received the materials and equipment free and clear of all liens, charges, security interests and encumbrances (which are hereinafter in these General Conditions referred to as "Liens") and evidence that the materials and equipment are covered by appropriate property insurance and other arrangements to protect OWNER'S interest therein, all of which will be satisfactory to OWNER. OWNER shall, within thirty (30) calendar days of presentation to him of an approved Application for Payment, pay CONTRACTOR the amount approved by CONSULTANT. Monthly progress payments shall be ninety (90) percent of the sum obtained by applying the respective bid unit prices to the approved estimated quantities of work completed by the Contractor during the preceding month. The remaining ten (10) percent will be held by the Owner, as retainage. At such time as the CONSULTANT deems appropriate - based on the quality of work performed, progress of cleanup, and other pertinent factors - the rate of retainage, or the total amount retained, may be reduced; although, any reduction in retainage, below the ten (10) percent level, is made solely at the CONSULTANT's discretion. All remaining retainage held will be included in the final payment to the Contractor.

13.2.1 Waivers of Mechanic's Lien

With each Application for Payment OWNER may require CONTRACTOR to submit waivers of mechanic's lien from entities lawfully entitled to file a mechanic's lien arising out of the Contract and related to the Work covered by the payment.

13.2.1.1 Requirement for waivers of Mechanic's Lien on Partial Applications for Payment will be determined and communicated at the Preconstruction Conference.

13.2.1.2 Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.

13.2.1.3 When an application shows completion of an item, submit conditional final or full waivers.

13.2.1.4 Owner reserves the right to designate which entities involved in the Work must submit waivers.

13.2.1.5 Waiver Forms: Submit executed waivers of lien on forms acceptable to Owner.

13.3 CONTRACTOR'S Warranty of Title

CONTRACTOR warrants and guarantees that title to all Work, materials and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to OWNER no later than the time of payment free and clear of all Liens.

13.4 Review of Applications for Progress Payment

13.4.1 Submission of Application for Payment

CONSULTANT will, after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the Application to OWNER, or return the Application to CONTRACTOR indicating in writing CONSULTANT'S reasons for refusing to recommend payment. In the latter case, CONTRACTOR may make the necessary corrections and resubmit the Application.

13.4.2 CONSULTANT'S Recommendation

CONSULTANT may refuse to recommend the whole or any part of any payment, if, in CONSULTANT'S opinion, it would be incorrect to make such representations to OWNER. CONSULTANT may also refuse to recommend any such payment, or, because of subsequently discovered evidence or the results of subsequent inspections or tests, nullify any such payment previously recommended, to such extent as may be necessary in CONSULTANT'S opinion to protect OWNER from loss because:

13.4.2.1 the Work is defective, or completed Work has been damaged requiring correction or replacement;

13.4.2.2 the Contract Price has been reduced by Written Amendment or Change Order;

13.4.2.3 OWNER has been required to correct defective Work or complete Work in accordance with paragraph 12.8; or

13.4.2.4 of CONSULTANT's actual knowledge of the occurrence of any of the events enumerated in paragraphs 14.2.1 through 14.2.9 inclusive.

13.5 Partial Utilization

OWNER at any time may request CONTRACTOR in writing to permit OWNER to use any such part of the Work which OWNER believes to be ready for its intended use and has been completed. If CONTRACTOR agrees, CONTRACTOR will certify to OWNER that said part of the Work is complete and request that a Certificate of Completion be issued for that part of the Work.

13.6 Final Inspection

Upon written notice from CONTRACTOR that the entire Work or an agreed portion thereof is complete, CONSULTANT will make a final inspection with CONTRACTOR and will notify CONTRACTOR in writing of all particulars in which this inspection reveals that the Work is incomplete or defective. CONTRACTOR shall immediately take such measures as are necessary to remedy such deficiencies.

13.7 Final Application for Payment

After CONTRACTOR has completed all such corrections to the satisfaction of CONSULTANT and delivered all maintenance and operating instructions, schedules, guarantees, Bonds, certificates of inspection, marked-up record documents (as provided in paragraph 5.14) and other documents - all as required by the Contract Documents, and after CONSULTANT has indicated that the Work is acceptable (subject to the provisions of paragraph 13.10), CONTRACTOR may make application for final payment following the procedure for progress payments. The final Application for Payment shall be accompanied by all documentation called for in the Contract Documents, together with complete and legally effective releases or waivers (satisfactory to OWNER) of all Liens arising out of or filed in connection with the Work. In lieu thereof and as approved by OWNER, CONTRACTOR may furnish receipts or releases in full; an affidavit of CONTRACTOR that the releases and receipts include all labor, services, material and equipment for which a Lien could be filed, and that all payrolls, material and equipment bills, and other indebtedness connected with the Work for which OWNER or OWNER'S property might in any way be responsible, have been paid or otherwise satisfied; and consent of the surety, if any, to final payment. If any Subcontractor or Supplier fails to

furnish a release or receipt in full, CONTRACTOR may furnish a Bond or other collateral satisfactory to OWNER to indemnify OWNER against any Lien.

13.8 Final Payment and Acceptance

13.8.1 CONSULTANT'S Approval

If, on the basis of CONSULTANT'S observation of the Work during construction and final inspection, and CONSULTANT'S review of the final Application for Payment and accompanying documentation - all as required by the Contract Documents, CONSULTANT is satisfied that the Work has been completed and CONTRACTOR'S other obligations under the Contract Documents have been fulfilled, CONSULTANT will, after receipt of the final Application for Payment, indicate in writing CONSULTANT'S recommendation of payment and present the Application to OWNER for payment. Thereupon CONSULTANT will give written notice to OWNER and CONTRACTOR that the Work is acceptable, subject to the provisions of paragraph 13.10. Otherwise, CONSULTANT will return the Application to CONTRACTOR, indicating in writing the reasons for refusing to recommend final payment, in which case CONTRACTOR shall make the necessary corrections and resubmit the Application.

13.8.2 Delay in Completion of Work

If, through no fault of CONTRACTOR, final completion of the Work is significantly delayed, OWNER shall, upon receipt of CONTRACTOR'S final Application for Payment and recommendation of CONSULTANT, and without terminating the Agreement, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance to be held by OWNER for Work not fully completed or corrected is less than the retainage stipulated in the Agreement, and if Bonds have been furnished as required in paragraph 10 of Part II, Information for Bidders, the written consent of the surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by CONTRACTOR to CONSULTANT with the Application for such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

13.8.3 Retainage

Retainage is not applicable to this project.

13.9 CONTRACTOR'S Continuing Obligation

CONTRACTOR'S obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. Neither recommendation of any progress or final payment by CONSULTANT, nor the issuance of a certificate of Completion, nor any payment by OWNER to CONTRACTOR under the Contract Documents, nor any use or occupancy of the Work or any part thereof by OWNER, nor any act of acceptance by OWNER nor any failure to do so, nor any review and

approval of a Shop Drawing or sample submission, nor any correction of defective Work by OWNER will constitute an acceptance of Work not in accordance with the Contract Documents or a release of CONTRACTOR'S obligation to perform the Work in accordance with the Contract Documents (except as provided in paragraph 13.10).

13.10 Waiver of Claims

The making and acceptance of final payment will constitute:

13.10.1 a waiver of all claims by OWNER against CONTRACTOR, except claims arising from unsettled Liens, from defective Work appearing after final inspection or from failure to comply with the Contract Documents or the terms of any special guarantees specified therein; however, it will not constitute a waiver by OWNER of any rights in respect of CONTRACTOR'S continuing obligations under the Contract Documents; and

13.10.2 a waiver of all claims by CONTRACTOR against OWNER other than those previously made in writing and still unsettled.

14. SUSPENSION OF WORK AND TERMINATION

14.1 OWNER May Suspend Work

OWNER may, at any time and without cause, suspend the Work or any portion thereof for a period of not more than ninety days by notice in writing to CONTRACTOR and CONSULTANT which will fix the date on which Work will be resumed. CONTRACTOR shall resume the Work on the date so fixed. CONTRACTOR shall be allowed an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to any suspension if CONTRACTOR makes an approved claim therefor as provided in Articles 10 and 11.

14.2 OWNER May Terminate

The OWNER may terminate the Work upon the occurrence of any one or more of the following events:

14.2.1 if CONTRACTOR commences a voluntary case under any chapter of the Bankruptcy Code (Title 11, United States Code), as now or hereafter in effect, or if CONTRACTOR takes any equivalent or similar action by filing a petition or otherwise under any other federal or state law in effect at such time relating to the bankruptcy or insolvency;

14.2.2 if a petition is filed against CONTRACTOR under any chapter of the Bankruptcy Code as now or hereafter in effect at the time of filing, or if a petition is filed seeking any such equivalent or similar relief against

CONTRACTOR under any other federal or state law in effect at the time relating to bankruptcy or insolvency;

14.2.3 if CONTRACTOR makes a general assignment for the benefit of creditors;

14.2.4 if a trustee, receiver, custodian or agent of CONTRACTOR is appointed under applicable law or under contract, whose appointment or authority to take charge of property of CONTRACTOR is for the purpose of enforcing a Lien against such property or for the purpose of general administration of such property for the benefit of CONTRACTOR'S creditors;

14.2.5 if CONTRACTOR admits in writing an inability to pay its debts generally as they become due;

14.2.6 if CONTRACTOR persistently fails to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the progress schedule established under paragraph 2.8 as revised from time to time);

14.2.7 if CONTRACTOR disregards Laws or Regulations of any public body having jurisdiction;

14.2.8 if CONTRACTOR disregards the authority of CONSULTANT, or

14.2.9 if CONTRACTOR otherwise violates in any substantial way any provisions of the Contract Documents;

OWNER may, after giving CONTRACTOR (and the surety) seven days' written notice and to the extent permitted by Laws and Regulations, terminate the services of CONTRACTOR, exclude CONTRACTOR from the site and take possession of the Work and of all CONTRACTOR'S tools, appliances, construction equipment and machinery at the site and use the same to the full extent they could be used by CONTRACTOR (without liability to CONTRACTOR for trespass or conversion), incorporate in the Work all materials and equipment stored at the site or for which OWNER has paid CONTRACTOR but which are stored elsewhere, and finish the Work as OWNER may deem expedient. In such case CONTRACTOR shall not be entitled to receive any further payment until the Work is finished. If the unpaid balance of the Contract Price exceeds the direct, indirect and consequential costs of completing the Work (including but not limited to fees and charges of engineers, architects, attorneys and other professionals and court and arbitration costs) such excess will be paid to CONTRACTOR. If such costs exceed such unpaid balance, CONTRACTOR shall pay the

difference to OWNER. Such costs incurred by OWNER will be approved as to reasonableness by CONSULTANT and incorporated in a Change Order, but when exercising any rights or remedies under this paragraph OWNER shall not be required to obtain the lowest price for the Work performed.

14.2.10 If safety violations are observed and brought to the Contractors attention and Contractor fails to take immediate corrective measures any repeat of similar safety violations, Owner will order an immediate termination of contract. Note: it is the Contractor's responsibility to know proper safety measures as they pertain to construction and OSHA.

14.2.11 This contract may be canceled by either party thirty (30) days after delivery by canceling party of written notice of intent to cancel to the other contracting party.

14.2.12 This contract may be canceled by the Lexington-Fayette Urban County Government if it is determined that the Bidder has failed to perform under the terms of this agreement, such cancellation to be effective upon receipt of written notice of cancellation by the Bidder.

14.3 CONTRACTOR'S Services Terminated

Where CONTRACTOR'S services have been so terminated by OWNER, the termination will not affect any rights or remedies of OWNER against CONTRACTOR then existing or which may thereafter accrue. Any retention or payment of moneys due CONTRACTOR by OWNER will not release CONTRACTOR from liability.

14.4 Payment After Termination

Upon seven days' written notice to CONTRACTOR, OWNER may, without cause and without prejudice to any other right or remedy, elect to abandon the Work and terminate the Agreement. In such case, CONTRACTOR shall be paid for all Work executed and any expense sustained plus reasonable termination expenses, which will include, but not be limited to, direct, indirect and consequential costs (including, but not limited to, fees and charges of engineers, architects, attorneys and other professionals and court and arbitration costs).

14.5 CONTRACTOR May Stop Work or Terminate

If, through no act or fault of CONTRACTOR, the Work is suspended for a period of more than ninety days by OWNER or under an order of court or other public authority, or CONSULTANT fails to act on any Application for Payment within sixty days after it is submitted, or OWNER fails for sixty days to pay CONTRACTOR any sum finally determined to be due, then CONTRACTOR may, upon seven days' written notice to OWNER and CONSULTANT, terminate the Agreement and recover from OWNER payment for all Work executed and any expense sustained plus reasonable termination expenses. In addition and in lieu of terminating the Agreement, if CONSULTANT has failed to act on an Application

for Payment or OWNER has failed to make any payment as aforesaid, CONTRACTOR may upon seven days' written notice to OWNER and CONSULTANT stop the Work until payment of all amounts then due. The provisions of this paragraph shall not relieve CONTRACTOR of the obligations under paragraph 5.16 to carry on the Work in accordance with the progress schedule and without delay during disputes and disagreements with OWNER.

15. MISCELLANEOUS

15.1 Claims for Injury or Damage

Should OWNER or CONTRACTOR suffer injury or damage to person or property because of any error, omission or act of the other party or of any of the other party's employees or agents or others for whose acts the other party is legally liable, claim will be made in writing to the other party within a reasonable time of the first observance of such injury or damage. The provisions of this paragraph 15.1 shall not be construed as a substitute for or a waiver of the provisions of any applicable statute of limitations or repose.

15.2 Non-Discrimination in Employment

The CONTRACTOR shall comply with the following requirements prohibiting discrimination:

15.2.1 That no person (as defined in KRS 344.010) shall bid on Lexington-Fayette Urban County Government construction projects, or bid to furnish materials or supplies to the Lexington-Fayette Urban County Government, if, within six months prior to the time of opening of bids, said person shall have been found, by declaratory judgment action in Fayette Circuit Court, to be presently engaging in an unlawful practice, as hereinafter defined. Such declaratory judgment action may be brought by an aggrieved individual or upon an allegation that an effort at conciliation pursuant to KRS 344.200 has been attempted and failed, by the Lexington-Fayette County Human Rights Commission.

15.2.2 That it is an unlawful practice for an employer:

15.2.2.1 to fail or refuse to hire, or to discharge any individual or otherwise to discriminate against an individual, with respect to his compensation, terms, conditions, or privileges of employment, because of such individual's race, color, religion, sex, age, or national origin; or

15.2.2.2 to limit, segregate or classify his employees in any way which would deprive or tend to deprive an individual of employment opportunities or otherwise adversely affect his status as an employee because of such individual's sex, race, color, religion, age, or national origin.

15.2.3 That it is an unlawful practice for an employer, labor organization, or joint-labor management committee controlling apprenticeship or other training or retraining, including on-the-job training programs to discriminate against an individual because of his race, color, religion, sex, age, or national origin in admission to, or employment in, any program established to provide apprenticeship or other training.

15.2.4 That a copy of this Ordinance shall be furnished all suppliers and made a part of all bid specifications.

15.2.5 This Ordinance shall take effect after it is signed, published and recorded, as required by law.

15.3 Temporary Street Closing or Blockage

The CONTRACTOR will notify the CONSULTANT at least 72 hours prior to making any temporary street closing or blockage. This will permit orderly notification to all concerned public agencies. Specific details and restrictions on street closure or blockage are contained in the Special Conditions.

15.4 Percentage of Work Performed by prime CONTRACTOR

The CONTRACTOR shall perform on site, and with its own organization, Work equivalent to at least fifty (50%) percent of the total amount of Work to be performed under the Contract. This percentage may be reduced by a supplemental agreement to this Contract if, during performing the Work, the CONTRACTOR requests a reduction and the CONSULTANT determines that the reduction would be to the advantage of the OWNER.

15.5 Clean-up

Cleanup shall progress, to the greatest degree practicable, throughout the course of the Work. The Work will not be considered as completed, and final payment will not be made, until the right-of-way and all ground occupied or affected by the Contractor in connection with the Work has been cleared of all rubbish, equipment,

excess materials, temporary structures, and weeds. Rubbish and all waste materials of whatever nature shall be disposed of, off of the project site, in an acceptable manner. All property, both public and private, which has been damaged in the prosecution of the Work, shall be restored in an acceptable manner. All areas shall be draining, and all drainage ways shall be left unobstructed, and in such a condition that drift will not collect or scour be induced.

15.6 General

The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto, and, in particular but without limitation, the warranties, guarantees and obligations imposed upon CONTRACTOR by paragraphs 12.1, 12.3.5, 13.3, and 15.2 and all of the rights and remedies available to OWNER and CONSULTANT thereunder, are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee or by other provisions of the Contract Documents, and the provisions of this paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right and remedy to which they apply. All representations, warranties and guarantees made in the Contract Documents will survive final payment and termination or completion of the Agreement.

15.7 Debris Disposal

For all LFUCG projects any trash, construction demolition debris, yard waste, dirt or debris of any kind that is removed from the project site must be disposed of in accordance with local, state, and federal regulations. The disposal site or facility must be approved in advance by the LFUCG and disposal documentation is required. The Contractor will be responsible for payment of any fines associated with improper disposal of material removed from the project site.

END OF SECTION

PART V
SPECIAL CONDITIONS
INDEX

- 1 BLASTING
- 2 RISK MANAGEMENT PROVISIONS –
INSURANCE AND INDEMNIFICATION
- 3 WAGE SCALE
- 4 WEATHER RELATED DELAYS

1. **BLASTING** – not applicable.

2. **RISK MANAGEMENT PROVISIONS**
INSURANCE AND INDEMNIFICATION

INDEMNIFICATION AND HOLD HARMLESS PROVISION

(1) It is understood and agreed by the parties that Contractor hereby assumes the entire responsibility and liability for any and all damages to persons or property caused by or resulting from or arising out of any act or omission on the part of Contractor or its employees, agents, servants, owners, principals, licensees, assigns or subcontractors of any tier (hereinafter "CONTRACTOR") under or in connection with this agreement and/or the provision of goods or services and the performance or failure to perform any work required thereby.

(2) CONTRACTOR shall indemnify, save, hold harmless and defend the Lexington-Fayette Urban County Government and its elected and appointed officials, employees, agents, volunteers, and successors in interest (hereinafter "LFUCG") from and against all liability, damages, and losses, including but not limited to, demands, claims, obligations, causes of action, judgments, penalties, fines, liens, costs, expenses, interest, defense costs and reasonable attorney's fees that are in any way incidental to or connected with, or that arise or are alleged to have arisen, directly or indirectly, from or by CONTRACTOR's performance or breach of the agreement and/or the provision of goods or services provided that: (a) it is attributable to personal injury, bodily injury, sickness, or death, or to injury to or destruction of property (including the loss of use resulting therefrom), or to or from the negligent acts, errors or omissions or willful misconduct of the CONTRACTOR; and (b) not caused solely by the active negligence or willful misconduct of LFUCG.

(3) In the event LFUCG is alleged to be liable based upon the above, CONTRACTOR shall defend such allegations and shall bear all costs, fees and expenses of such defense, including but not limited to, all reasonable attorneys' fees and expenses, court costs, and expert witness fees and expenses, using attorneys approved in writing by LFUCG, which approval shall not be unreasonably withheld.

(4) These provisions shall in no way be limited by any financial responsibility or insurance requirements, and shall survive the termination of this agreement.

(5) LFUCG is a political subdivision of the Commonwealth of Kentucky. CONTRACTOR acknowledges and agrees that LFUCG is unable to provide indemnity or otherwise save, hold harmless, or defend the CONTRACTOR in any manner.

FINANCIAL RESPONSIBILITY

BIDDER/CONTRACTOR understands and agrees that it shall, prior to final acceptance of its bid and the commencement of any work, demonstrate the ability to assure compliance with the above Indemnity provisions and these other risk management provisions.

INSURANCE REQUIREMENTS

YOUR ATTENTION IS DIRECTED TO THE INSURANCE REQUIREMENTS BELOW, AND YOU MAY NEED TO CONFER WITH YOUR INSURANCE AGENTS, BROKERS, OR CARRIERS TO DETERMINE IN ADVANCE OF SUBMISSION OF A RESPONSE THE AVAILABILITY OF THE INSURANCE COVERAGES AND ENDORSEMENTS REQUIRED HEREIN. IF YOU FAIL TO COMPLY WITH THE INSURANCE REQUIREMENTS BELOW, YOU MAY BE DISQUALIFIED FROM AWARD OF THE CONTRACT.

Required Insurance Coverage

BIDDER/CONTRACTOR shall procure and maintain for the duration of this contract the following or equivalent insurance policies at no less than the limits shown below and cause its subcontractors to maintain similar insurance with limits acceptable to LFUCG in order to protect LFUCG against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work hereunder by CONTRACTOR. The cost of such insurance shall be included in any bid:

<u>Coverage</u>	<u>Limits</u>
General Liability aggregate (Insurance Services Office Form CG 00 01)	\$1 million per occurrence, \$2 million or \$2 million combined single limit
Commercial Automobile Liability occurrence (Insurance Services Office Form CA 0001)	combined single, \$1 million per
Worker's Compensation	Statutory
Employer's Liability	\$100,000.00
Excess/Umbrella Liability	\$2 million per occurrence

The policies above shall contain the following conditions:

- a. All Certificates of Insurance forms used by the insurance carrier shall be properly filed and approved by the Department of Insurance for the Commonwealth of Kentucky (DOI). LFUCG shall be named as an additional insured in the General Liability Policy and Commercial Automobile Liability Policy using the Kentucky DOI approved forms.
- b. The General Liability Policy shall be primary to any insurance or self-insurance retained by LFUCG.

c. The General Liability Policy shall include a Products and Completed Operations endorsement or Premises and Operations Liability endorsement unless it is deemed not to apply by LFUCG.

d. LFUCG shall be provided at least 30 days advance written notice via certified mail, return receipt requested, in the event any of the required policies are canceled or non-renewed.

e. Said coverage shall be written by insurers acceptable to LFUCG and shall be in a form acceptable to LFUCG. Insurance placed with insurers with a rating classification of no less than Excellent (A or A-) and a financial size category of no less than VIII, as defined by the most current Best's Key Rating Guide shall be deemed automatically acceptable.

Renewals

After insurance has been approved by LFUCG, evidence of renewal of an expiring policy must be submitted to LFUCG, and may be submitted on a manually signed renewal endorsement form. If the policy or carrier has changed, however, new evidence of coverage must be submitted in accordance with these Insurance Requirements.

Deductibles and Self-Insured Programs

IF YOU INTEND TO SUBMIT A SELF-INSURANCE PLAN IT MUST BE FORWARDED TO LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT, DIVISION OF RISK MANAGEMENT, 200 EAST MAIN STREET, LEXINGTON, KENTUCKY 40507 NO LATER THAN A MINIMUM OF FIVE (5) WORKING DAYS PRIOR TO THE RESPONSE DATE. Self-insurance programs, deductibles, and self-insured retentions in insurance policies are subject to separate approval by Lexington-Fayette Urban County Government's Division of Risk Management, upon review of evidence of BIDDER/CONTRACTOR's financial capacity to respond to claims. Any such programs or retentions must provide LFUCG with at least the same protection from liability and defense of suits as would be afforded by first-dollar insurance coverage. If BIDDER/CONTRACTOR satisfies any portion of the insurance requirements through deductibles, self-insurance programs, or self-insured retentions, BIDDER/CONTRACTOR agrees to provide Lexington-Fayette Urban County Government, Division of Risk Management, the following data prior to the final acceptance of bid and the commencement of any work:

- a. Latest audited financial statement, including auditor's notes.
- b. Any records of any self-insured trust fund plan or policy and related accounting statements.
- c. Actuarial funding reports or retained losses.

- d. Risk Management Manual or a description of the self-insurance and risk management program.
- e. A claim loss run summary for the previous five (5) years.
- f. Self-Insured Associations will be considered.

Safety and Loss Control

CONTRACTOR shall comply with all applicable federal, state, and local safety standards related to the performance of its works or services under this Agreement and take necessary action to protect the life, health and safety and property of all of its personnel on the job site, the public, and LFUCG.

Verification of Coverage

BIDDER/CONTRACTOR agrees to furnish LFUCG with all applicable Certificates of Insurance signed by a person authorized by the insurer to bind coverage on its behalf prior to final award, and if requested, shall provide LFUCG copies of all insurance policies, including all endorsements.

Right to Review, Audit and Inspect

CONTRACTOR understands and agrees that LFUCG may review, audit and inspect any and all of its records and operations to insure compliance with these Insurance Requirements.

DEFAULT

BIDDER/CONTRACTOR understands and agrees that the failure to comply with any of these insurance, safety, or loss control provisions shall constitute default and that LFUCG may elect at its option any single remedy or penalty or any combination of remedies and penalties, as available, including but not limited to purchasing insurance and charging BIDDER/CONTRACTOR for any such insurance premiums purchased, or suspending or terminating the work.

00357187

3. WAGE SCALES – NOT APPLICABLE.

4. WEATHER RELATED DELAYS

- A. The Project Completion date shall be established with the understanding that no extension of time will be granted for weather related delays that are within the average temperature or number of rain or snow days within a particular month. The average weather conditions shall be established by referencing the records of the National Oceanic and Atmospheric Administration (NOAA) and as defined herein.
- B. Extensions of inclement weather shall be granted only when the work affected must be on schedule at the time of delay. No time will be granted for work which is behind schedule in excess of the actual delay caused by the weather, assuming the work had been on schedule.
- C. Time granted for weather delays shall be requested on a monthly basis.
- D. The weather experienced at the project site during the contract period must be found to be unusually severe, that is more severe than the adverse weather anticipated for the project location during any given month. The unusually severe weather must actually cause a delay to the completion of the project. The delay must be beyond the control and without the fault or negligence of the contractor.
- E. The anticipated adverse weather delays shall be based on the National Oceanic and Atmospheric Administration (NOAA) climatology ten year average for the Lexington Bluegrass Airport KY US location. The Mean Number of Days of daily precipitation using ≥ 0.10 will determine the base line for monthly anticipated adverse weather evaluations. The contractor's progress schedule must reflect these anticipated adverse weather delays in all weather dependent activities. Upon acknowledgement of the Notice to Proceed (NTP) and continuing throughout the contract, the contractor will record the occurrence of actual adverse weather and resultant impact to normally scheduled work. Actual adverse weather delay days must prevent work on critical path activities for 50 percent or more of the contractor's scheduled work date. The number of actual adverse weather delay days shall be calculated chronologically from the first to the last day of each month, and be recorded as full days. The number of actual adverse weather days greater than the number of anticipated adverse weather days, listed above, shall be the number of unusually severe weather days for the purposes of any contract extensions (actual adverse weather days - anticipated adverse weather days = unusually severe weather days.)
- F. Definitions:
 - 1. "Unusually severe weather" - weather that is more severe than the adverse weather anticipated for the season or location involved.

2. "Adverse weather" - atmospheric conditions at a definite time and place that are unfavorable to construction activities.

END OF SECTION

PART VI

CONTRACT AGREEMENT

INDEX

1.	SCOPE OF WORK.....	CA-2
2.	TIME OF COMPLETION.....	CA-2
3.	ISSUANCE OF WORK ORDERS	CA-2
4.	THE CONTRACT SUM	CA-2
5.	PROGRESS PAYMENTS.....	CA-3
6.	ACCEPTANCE AND FINAL PAYMENT	CA-3
7.	THE CONTRACT DOCUMENTS.....	CA-3
8.	EXTRA WORK.....	CA-3
9.	SPECIFICATIONS AND DRAWINGS	CA-4

PART VI

CONTRACT AGREEMENT

THIS AGREEMENT, made on the _____ day of _____, 20____, by and between **Lexington-Fayette Urban County Government**, acting herein called "OWNER" and **Aequitas Power Company**, doing business as a partnership located in the City of Shelbyville, County of Shelby, and State of Kentucky, hereinafter called "CONTRACTOR."

WITNESSETH: That the CONTRACTOR and the OWNER in consideration of Four Hundred Fifty-Six Thousand Eight Hundred Dollars and Zero Cents (\$456,800.00) quoted in the proposal by the CONTRACTOR, dated April 2, 2025, hereby agree to commence and complete the construction described as follows:

1. SCOPE OF WORK

The CONTRACTOR shall furnish all the materials, supplies, machinery, equipment, tools, superintendence, labor, insurance, and other accessories and services necessary to complete the said project in accordance with the conditions and prices stated in the Proposal, the General Conditions, and the Special Conditions of the Contract, the Specifications and Contract Documents therefore as prepared by GRW Engineers for the Town Branch Primary Effluent Pump Station MCC Replacement project.

2. TIME OF COMPLETION

The time estimated and authorized by the OWNER for the proper execution of the Work by the Contract, in full, is hereby fixed as three hundred thirty-six (336) days to substantial completion and an additional fourteen (14) days to final completion. The time shall begin in accordance with the Notice to Proceed provided by OWNER.

3. ISSUANCE OF WORK ORDERS

Notice to begin Work will be given in whole or for part of the Work as determined by the OWNER pending the availability of funds. The order of construction will be as determined after consultation between the CONTRACTOR and the OWNER.

4. THE CONTRACT SUM

The OWNER agrees to pay the CONTRACTOR in current funds for the performance of the Contract, as quoted in the proposal, subject to any additions and deductions, as provided therein.

5. PROGRESS PAYMENTS

The OWNER shall make payments on account of the Contract, as provided in accordance with the General Conditions, less the aggregate of previous payments.

6. ACCEPTANCE AND FINAL PAYMENT

Final payment shall be due within ninety (90) days after completion of the Work, provided the Work be then fully completed and the Contract fully accepted.

Before issuance of final certificate, the CONTRACTOR shall submit evidence satisfactory to the Owner that all payrolls, material bills, and other indebtedness connected with the Work has been paid.

If, after the Work has been substantially completed, full completion thereof is materially delayed through no fault of the CONTRACTOR, the OWNER shall without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

7. THE CONTRACT DOCUMENTS

The Advertisement for Bids, Information for Bidders, the General Conditions, Performance and Payment Bonds, Contract Agreement, Special Conditions, Technical Specifications, any and all Addenda, and Proposal, Ion Wave Q&A, and Plan Drawings form the Contract, and they are fully a part of the Contract as if hereto attached or herein repeated.

8. EXTRA WORK

The OWNER, without invalidating the Contract, may order extra work or make changes by altering, adding to or deducting from the Work, the Contract Sum being adjusted accordingly. All such Work shall be executed and paid for in accordance with the General Conditions, which is a part of this Contract.

9. THE FOLLOWING IS AN ENUMERATION OF THE SPECIFICATIONS AND DRAWINGS (CONTRACT DOCUMENTS):

SPECIFICATIONS

**SECTION
NO.**

TITLE

I	Advertisement for Bids
II	Information for Bidders
III	Form of Proposal
IV	General Conditions
V	Special Conditions
VI	Contract Agreement
VII	Performance and Payment Bonds
VIII	Addenda
IX	Technical Specifications and Drawings

IN WITNESSETH WHEREOF, the parties hereto have executed this Contract as of the date and year above written.

(Seal)

Lexington-Fayette Urban County Government.

Lexington, Kentucky

(Owner)

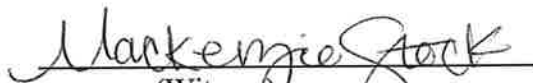
ATTEST:



Clerk of the Urban County Council

BY:



MAYOR


(Witness)


(Title)

(Seal)

Aequitas Power Company

(Contractor)

(Secretary)*

BY:

 Joan Flynn


(Witness)


(Title)

401 4th St. P.O. Box Shelbyville Ky 40065
(Address and Zip Code)

IMPORTANT: *Strike out any non-applicable terms.

Secretary of the Owner should attest. If the CONTRACTOR is corporation,
Secretary should attest. Give proper title of each person-executing Contract.



CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)
6/3/2025

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Houchens Insurance Group 410 Ring Road Elizabethtown, KY 42701	CONTACT NAME: Kayla Knight	
	PHONE (A/C, No, Ext): (270) 467-1281 4633	FAX (A/C, No):
INSURED Aequitas Power Company, LLC 401 4th Street PO Box 1407 Shelbyville, KY 40065	E-MAIL ADDRESS: kknight@higusa.com	
	INSURER(S) AFFORDING COVERAGE	
	INSURER A : Scottsdale Insurance Company	
	INSURER B : Acuity	
	INSURER C : RSUI Indemnity Company	
	INSURER D : Carolina Casualty Insurance Company	
INSURER E : Global Aerospace, Inc.		
INSURER F :		
NAIC #		
41297		
14184		
22314		
10510		

COVERAGES

CERTIFICATE NUMBER:

REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PROJECT <input checked="" type="checkbox"/> LOC OTHER:	X		CPS8139569	2/12/2025	2/12/2026	EACH OCCURRENCE \$ 1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 500,000 MED EXP (Any one person) \$ 5,000 PERSONAL & ADV INJURY \$ 1,000,000 GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COMP/OP AGG \$ 2,000,000 EMP BEN AGG \$ 1,000,000
B	<input checked="" type="checkbox"/> AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO OWNED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> HIRED AUTOS ONLY <input type="checkbox"/> NON-OWNED AUTOS ONLY	X		ZU0937	2/1/2025	2/1/2026	COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$
C	<input type="checkbox"/> UMBRELLA LIAB <input checked="" type="checkbox"/> OCCUR <input checked="" type="checkbox"/> EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE DED RETENTION \$			NHA604799	2/12/2025	2/12/2026	EACH OCCURRENCE \$ 5,000,000 AGGREGATE \$ 5,000,000 \$
D	<input checked="" type="checkbox"/> WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) <input checked="" type="checkbox"/> Y / <input type="checkbox"/> N If yes, describe under DESCRIPTION OF OPERATIONS below		N/A	BIN212562746	5/15/2025	5/15/2026	<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTH-ER E.L. EACH ACCIDENT \$ 1,000,000 E.L. DISEASE - EA EMPLOYEE \$ 1,000,000 E.L. DISEASE - POLICY LIMIT \$ 1,000,000
E	Drone Liability			9044820	5/14/2025	5/14/2026	Limit 5,000,000
B	Leased/Rented Equip			ZU0937	2/1/2025	2/1/2026	Limit 350,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)
Utility Contractor- Powerline Construction

Project: Town Branch Primary Effluent Pump Station MCC Replacement Bid 42-2025

Lexington-Fayette Urban County Government and GRW Engineers, 801 Corporate Dr. Lexington, KY 40503 are Additional Insureds as pertains to the Auto Liability and General (continued)

CERTIFICATE HOLDER

CANCELLATION

Lexington- Fayette Urban County Government Division of Central Purchasing 200 East Main St, 3rd Floor, Rm 338 Lexington, KY 40507	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.
	AUTHORIZED REPRESENTATIVE

PART VII

PERFORMANCE AND PAYMENT BONDS

1. PERFORMANCE BOND
2. PAYMENT BOND

PART VII

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS, that

Aequitas Power Company, LLC

(Name of CONTRACTOR)

153 Plantation Drive, Shelbyville, KY 40065

(Address of CONTRACTOR)

a Limited Liability Company, hereinafter
(Corporation, Partnership, or Individual)

called Principal, and The Gray Casualty & Surety Company
(Name of Surety)

P.O. Box 6202, Metairie, LA 70009 - 6202

(Address of Surety)

hereinafter called Surety, are held and firmly bound unto

LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT
200 East Main Street, Third Floor
Lexington, Kentucky 40507

hereinafter called "OWNER" in the penal sum of: Four Hundred Fifty-Six Thousand Eight Hundred and 00/100 Dollars, (\$456,800.00), for the payment of whereof Principal and Surety bind themselves, their heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

WHEREAS, Principal by written agreement is entering into a Contract with OWNER for **Town Branch Primary Effluent Pump Station MCC Replacement** in accordance with drawings and specifications prepared by: GRW Engineers which Contract is by reference made a part hereof, and is hereinafter referred to as the Contract.

NOW THEREFORE, THE CONDITION OF THIS OBLIGATION is such that if the Principal shall promptly and faithfully perform said Contract, then this obligation shall be null and void; otherwise it shall remain in full force and effect.

The Surety hereby waives notice of any alteration or extension of time made by the OWNER.

Whenever, Principal shall be, and declared by OWNER to be in default under the Contract, the OWNER having performed OWNER'S obligations thereunder, the Surety may promptly remedy the default, or shall promptly:

- (1) Complete the Contract in accordance with its terms and conditions or
- (2) Obtain a bid or bids for completing the Contract in accordance with its terms and conditions, and upon determination by Surety of the lowest responsible bidder, or if the OWNER elects, upon determination by the OWNER and Surety jointly of the lowest responsible bidder, arrange for a Contract between such bidder and OWNER, and make available as Work progresses (even though there may be a default or a succession of defaults under the Contract or Contracts of completion arranged under this paragraph) sufficient funds to pay the cost of completion less the balance of the Contract Price; but not exceeding, including other costs and damages for which the Surety may be liable hereunder, the amount set forth in the first paragraph hereof. The term "balance of the Contract Price", as used in this paragraph shall mean the total amount payable by OWNER to Principal under the Contract and any amendments thereto, less the amount properly paid by OWNER to Principal.

Any suit under this bond must be instituted before the expiration of two (2) years from the date on which final payment under the Contract falls due.

No right of action shall accrue on this bond to or for the use of any person or corporation other than the OWNER named herein or the heirs, executors, administrators or successors of OWNER.

Bond No.: GSH2700132

IN WITNESS WHEREOF, this instrument is executed in 3 each one of which shall be
(number)
deemed an original, this the 8th day of May, 2025.

ATTEST:

Aequitas Power Company, LLC

(Principal) Secretary

BY: _____ (s)

153 Plantation Drive

(Address)

Shelbyville, KY 40065

Witness as to Principal

(Address)

The Gray Casualty & Surety Company

ATTEST:

BY: R. Meyer Hundley
R. Meyer Hundley, Attorney-in-Fact

Elizabeth Kille

Elizabeth Kille, Bond Assistant

P.O. Box 6202

Metairie, LA 70009

(SEAL)

Car Ct

Caroline Courtenay, Witness

2307 River Road, Suite #200

Louisville, KY 40206

TITLE: _____
Surety

BY: _____

TITLE: Bond Assistant

NOTE: The number of executed counterparts of the bond shall coincide with the number of executed counterparts of the Contract.

**THE GRAY INSURANCE COMPANY
THE GRAY CASUALTY & SURETY COMPANY**

GENERAL POWER OF ATTORNEY

Bond Number: GSH2700132 **Principal:** Aequis Power Company, LLC
Project: Town Branch Primary Effluent Pump Station MCC Replacement

KNOW ALL BY THESE PRESENTS, THAT The Gray Insurance Company and The Gray Casualty & Surety Company, corporations duly organized and existing under the laws of Louisiana, and having their principal offices in Metairie, Louisiana, do hereby make, constitute, and appoint: **Charles Mccarty, James T. Smith, Deborah S. Neichter, Jason D. Cromwell, Ryan C. Britt, and R. Meyer Hundley of Louisville, Kentucky jointly and severally** on behalf of each of the Companies named above its true and lawful Attorney(s)-in-Fact, to make, execute, seal and deliver, for and on its behalf and as its deed, bonds, or other writings obligatory in the nature of a bond, as surety, contracts of suretyship as are or may be required or permitted by law, regulation, contract or otherwise, provided that no bond or undertaking or contract of suretyship executed under this authority shall exceed the amount of \$25,000,000.00.

This Power of Attorney is granted and is signed by facsimile under and by the authority of the following Resolutions adopted by the Boards of Directors of both The Gray Insurance Company and The Gray Casualty & Surety Company at meetings duly called and held on the 26th day of June, 2003.

"RESOLVED, that the President, Executive Vice President, any Vice President, or the Secretary be and each or any of them hereby is authorized to execute a power of Attorney qualifying the attorney named in the given Power of Attorney to execute on behalf of the Company bonds, undertakings, and all contracts of surety, and that each or any of them is hereby authorized to attest to the execution of such Power of Attorney, and to attach the seal of the Company; and it is

FURTHER RESOLVED, that the signature of such officers and the seal of the Company may be affixed to any such Power of Attorney or to any certificate relating thereto by facsimile, and any such Power of Attorney or certificate bearing such facsimile signature or facsimile seal shall be binding upon the Company now and in the future when so affixed with regard to any bond, undertaking or contract of surety to which it is attached.

IN WITNESS WHEREOF, The Gray Insurance Company and The Gray Casualty & Surety Company have caused their official seals to be hereinto affixed, and these presents to be signed by their authorized officers this 4th day of November, 2022.



By:

Michael T. Gray
President
The Gray Insurance Company

Cullen S. Piske
President
The Gray Casualty & Surety Company



State of Louisiana

ss:

Parish of Jefferson

On this 4th day of November, 2022, before me, a Notary Public, personally appeared Michael T. Gray, President of The Gray Insurance Company, and Cullen S. Piske, President of The Gray Casualty & Surety Company, personally known to me, being duly sworn, acknowledged that they signed the above Power of Attorney and affixed the seals of the companies as officers of, and acknowledged said instrument to be the voluntary act and deed, of their companies.



Leigh Anne Henican
Notary Public
Notary ID No. 92653
Orleans Parish, Louisiana

Leigh Anne Henican
Notary Public, Parish of Orleans State of Louisiana
My Commission is for Life

I, Mark S. Manguno, Secretary of The Gray Insurance Company, do hereby certify that the above and forgoing is a true and correct copy of a Power of Attorney given by the companies, which is still in full force and effect. IN WITNESS WHEREOF, I have set my hand and affixed the seals of the Company this 8th day of May, 2025.

I, Leigh Anne Henican, Secretary of The Gray Casualty & Surety Company, do hereby certify that the above and forgoing is a true and correct copy of a Power of Attorney given by the companies, which is still in full force and effect. IN WITNESS WHEREOF, I have set my hand and affixed the seals of the Company this 8th day of May, 2025.



PART VII

PAYMENT BOND

KNOW ALL MEN BY THESE PRESENT: that

Aequitas Power Company, LLC

(Name of Contractor)

153 Plantation Drive, Shelbyville, KY 40065

(Address of Contractor)

a Limited Liability Company, hereinafter

(Corporation, Partnership or Individual)

called Principal, and The Gray Casualty & Surety Company

(Name of Surety)

P.O. Box 6202, Metairie, LA 70009 - 6202

(Address of Surety)

Herein after called Surety, are held and firmly bound unto:

LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT

200 East Main Street, Third Floor

Lexington, Kentucky 40507

Obligee, hereinafter called OWNER, for the use and benefit of claimants as hereinafter defined, in the amount Four Hundred Fifty-Six Thousand Eight Hundred and 00/100 Dollars, (\$456,800.00) the payment whereof Principal and Surety bind themselves, their heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

WHEREAS, Principal by written agreement is entering into a Contract with OWNER for **Town Branch Primary Effluent Pump Station MCC Replacement** in accordance with drawings and specifications prepared by: **GRW Engineers** which Contract is by reference made a part hereof, and is hereinafter referred to as the Contract.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that, if Principal shall promptly make payment to all claimants as hereinafter defined for all labor and material used or reasonably required for use in the performance of the Contract, then this obligation shall be void; otherwise it shall remain in full force and effect, subject, however, to the following conditions.

1. A claimant is defined as one having a direct contract with the Principal or with a Subcontractor of the Principal for labor, material, or both, used or reasonably required for use in the performance of the Contract, labor and material being construed to include that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental of equipment directly applicable to the Contract.

2. The above named Principal and Surety hereby jointly and severally agree with the OWNER that every claimant as herein defined, who has not been paid in full before the expiration of a period of ninety (90) days after the date on which the last of such claimant's work or labor was done or performed, or materials were furnished by such claimant, may sue on this bond for the use of such claimant, prosecute the suit to final judgment for such sum or sums as may be justly due claimant, and have execution thereon. The OWNER shall not be liable for the payment of any costs or expenses of any such suit.
3. No suit or action shall be commenced hereunder by any claimant:
 - (a) Unless claimant, other than one having a direct contract with the Principal, shall have given written notice to any two of the following: The Principal, the OWNER, or the Surety above named, within ninety (90) days after such claimant did or performed the last of the Work or labor, or furnished the last of the materials for which said claim is made, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were furnished, or for whom the Work or labor was done or performed. Such notice shall be served by mailing the same by registered mail or certified mail, postage prepaid, in an envelope addressed to the Principal, OWNER, or Surety, at any place where an office is regularly maintained for the transaction of business, or served in any manner in which legal process may be served in the state in which the aforesaid project is located, save that such service need not be made by a public officer.
 - (b) After the expiration of one (1) year following the date on which Principal ceased Work on said Contract, it being understood, however, that if any limitation embodied in this bond is prohibited by any law controlling the construction hereof such limitation shall be deemed to be amended so as to be equal to the minimum period of limitation permitted by such law.
 - (c) Other than in a state court of competent jurisdiction in and for the county or other political subdivision of the state in which the project, or any part thereof, is situated, or in the United States District Court for the district in which the project, or any part thereof, is situated, and not elsewhere.
4. The amount of this bond shall be reduced by and to the extent of any payment or payments made in good faith hereunder, inclusive of the payment by Surety of mechanics' liens which may be filed of record against aid improvement, whether or not claim for the amount of such lien be presented under and against this bond.

Bond No.: GSH2700132

IN WITNESS WHEREOF, this instrument is executed in 3 counterparts, each one of
(number)

which shall be deemed an original, this the 8th day of May, 2025.

ATTEST:

Aequitas Power Company, LLC

(Principal) Secretary

(SEAL)

BY: _____ (s)

(Witness to Principal)

(Address)

The Gray Casualty & Surety Company

ATTEST:

BY: R. Meyer Hundley
R. Meyer Hundley, Attorney-in-Fact

Elizabeth Kille
Elizabeth Kille, Bond Assistant

(SEAL)

Carla Court
Caroline Courtenay, Bond Assistant

P.O. Box 6202

Metairie, LA 70009

2307 River Road, Suite #200, Louisville, KY 40206

NOTE: The number of executed counterparts of the bond shall coincide with the number of executed counterparts of the Contract.

END OF SECTION

**THE GRAY INSURANCE COMPANY
THE GRAY CASUALTY & SURETY COMPANY**

GENERAL POWER OF ATTORNEY

Bond Number: GSH2700132 **Principal:** Aequitas Power Company, LLC
Project: Town Branch Primary Effluent Pump Station MCC Replacement

KNOW ALL BY THESE PRESENTS, THAT The Gray Insurance Company and The Gray Casualty & Surety Company, corporations duly organized and existing under the laws of Louisiana, and having their principal offices in Metairie, Louisiana, do hereby make, constitute, and appoint: **Charles McCarty, James T. Smith, Deborah S. Neichter, Jason D. Cromwell, Ryan C. Britt, and R. Meyer Hundley of Louisville, Kentucky jointly and severally** on behalf of each of the Companies named above its true and lawful Attorney(s)-in-Fact, to make, execute, seal and deliver, for and on its behalf and as its deed, bonds, or other writings obligatory in the nature of a bond, as surety, contracts of suretyship as are or may be required or permitted by law, regulation, contract or otherwise, provided that no bond or undertaking or contract of suretyship executed under this authority shall exceed the amount of \$25,000,000.00.

This Power of Attorney is granted and is signed by facsimile under and by the authority of the following Resolutions adopted by the Boards of Directors of both The Gray Insurance Company and The Gray Casualty & Surety Company at meetings duly called and held on the 26th day of June, 2003.

"RESOLVED, that the President, Executive Vice President, any Vice President, or the Secretary be and each or any of them hereby is authorized to execute a power of Attorney qualifying the attorney named in the given Power of Attorney to execute on behalf of the Company bonds, undertakings, and all contracts of surety, and that each or any of them is hereby authorized to attest to the execution of such Power of Attorney, and to attach the seal of the Company; and it is

FURTHER RESOLVED, that the signature of such officers and the seal of the Company may be affixed to any such Power of Attorney or to any certificate relating thereto by facsimile, and any such Power of Attorney or certificate bearing such facsimile signature or facsimile seal shall be binding upon the Company now and in the future when so affixed with regard to any bond, undertaking or contract of surety to which it is attached.

IN WITNESS WHEREOF, The Gray Insurance Company and The Gray Casualty & Surety Company have caused their official seals to be hereinto affixed, and these presents to be signed by their authorized officers this 4th day of November, 2022.



By:

Michael T. Gray

Michael T. Gray
President
The Gray Insurance Company

Cullen S. Piske

Cullen S. Piske
President
The Gray Casualty & Surety Company



State of Louisiana

ss:

Parish of Jefferson

On this 4th day of November, 2022, before me, a Notary Public, personally appeared Michael T. Gray, President of The Gray Insurance Company, and Cullen S. Piske, President of The Gray Casualty & Surety Company, personally known to me, being duly sworn, acknowledged that they signed the above Power of Attorney and affixed the seals of the companies as officers of, and acknowledged said instrument to be the voluntary act and deed, of their companies.



Leigh Anne Henican
Notary Public
Notary ID No. 92653
Orleans Parish, Louisiana

Leigh Anne Henican

Leigh Anne Henican
Notary Public, Parish of Orleans State of Louisiana
My Commission is for Life

I, Mark S. Manguno, Secretary of The Gray Insurance Company, do hereby certify that the above and forgoing is a true and correct copy of a Power of Attorney given by the companies, which is still in full force and effect. IN WITNESS WHEREOF, I have set my hand and affixed the seals of the Company this 8th day of May, 2025.

Mark S. Manguno

I, Leigh Anne Henican, Secretary of The Gray Casualty & Surety Company, do hereby certify that the above and forgoing is a true and correct copy of a Power of Attorney given by the companies, which is still in full force and effect. IN WITNESS WHEREOF, I have set my hand and affixed the seals of the Company this 8th day of May, 2025.

Leigh Anne Henican



ADDENDA

**Addendum
Number**

Date

Bid Number # 42-2025 MCC Replacement

3/27/2025

**ADDENDUM No. 1**

Bid Number: **#42-2025**
 Subject: Town Branch Primary Effluent Pump Station
 MCC Replacement

Date: March 27, 2025

Address inquiries to:
 Q&A Module on Ion Wave

Brian Marcum
brianm@lexingtonky.gov
 (859) 258-3325

TO ALL PROSPECTIVE SUBMITTERS:

Please be advised of the following clarifications to the above referenced Bid:

	Questions	Answers
1.	Is the designed capacity of 10MGD for each pump or total for the bypass system? The specs call out section 330133 for bypass pumping, is this section included in the specs?	The bypass pumping system is an allowance to the construction contract. The contractor will be responsible for coordinating the bypass pumping effort, but they do not need to secure bids for the work. The Owner will be using an existing bypass pumping contract. See attached specification section 330133 for further clarification.

1. **CLARIFICATIONS - NA**

2. **DRAWINGS**

A. Sheet E-00-101 – Keynote 1 should read as follows:

PROVIDE #3/0 BARE COPPER GROUNDING ELECTRODE CONDUCTOR FROM MAIN BUILDING GROUND BAR TO GROUND ROD TRIAD. ROUTE IN GALVANIZED RIGID STEEL CONDUIT (BOND CONDUIT AT BOTH ENDS).

3. **SPECIFICATIONS**

A. Specification Section 330133 Sewer Flow Control

- a. The attached specification section 330133 shall be added to the contract document set.



MAYOR LINDA GORTON



LEXINGTON

TODD SLATIN
DIRECTOR
CENTRAL PURCHASING



Todd Slatin, Director
Division of Central Purchasing

All other terms and conditions of the Bid and specifications are unchanged.
This letter should be signed, attached to and become a part of your Bid.

COMPANY NAME: _____

ADDRESS: _____

SIGNATURE OF BIDDER: _____

Attachments:

Drawings	NA
Specifications	Specification Section 330133
Plan Holders List	



SECTION 330133 – SEWER FLOW CONTROL

PART 1 - GENERAL

1.1 TEMPORARY BYPASS PUMPING – CONTRACT ALLOWANCE

- A. General: Consult LFUCG and plans for specific bypass pumping requirements. Requirements below are meant to define the Contractor's scope of work regarding the temporary bypass pumping system and to provide informative design criteria to aid the Contractor in coordinating the required bypass pumping scope of work.
1. Refer to Specification Section 012100 for allowance requirements. Bypass pumping equipment rental will be procured through Contract Allowance and Owner Direct PO with project funds.
 2. The Contractor shall engage selected Bypass Pumping Vendor and coordinate delivery and setup of temporary pumping system. Contractor shall assist in loading and unloading of rental equipment.
 3. The Owner will provide a Maintenance Mechanic to operate the temporary bypass pumping facilities when needed.
 4. The temporary bypass pumping facilities shall be designed to convey peak dry weather and wet weather flows from the upstream manholes where existing manhole or sewer tie-ins, replacement, or modifications will be conducted in a manner that will prevent backup of the existing system. The bypass pumping flow will be 10 MGD at 35 ft TDH.
 5. All tie-ins, replacement, or modifications shall be performed during low flow conditions.
 6. To the extent possible, all tie-ins, replacement, or modifications of Work shall be accomplished in no more than one 8-hour period. If Work required extends beyond eight hours or weather causes higher flows in the existing system during the Work, the new Work shall be stopped, and the existing system shall be placed back into service. The new Work shall be properly protected from damage. Any damage to the new Work or damage to surrounding areas caused by the new Work shall be repaired or replaced at the Owner's decision by the Contractor at the Contractor's sole expense.
 7. The Owner will provide all fuel, maintenance materials, parts, and other expendables in order to maintain temporary pumping through the duration of the Work.
 8. The Owner will be responsible for monitoring the pumps and fuel levels while in use.
 9. The bypass pumping system shall be provided with one standby pump equal in capacity to the largest pump on site.
 10. The bypass pumping system shall have an automatic start system that will sense failure of the primary system and switch over automatically to the backup system.
 11. The bypass pumping system shall immediately notify proper personnel when a failure of the bypass pumping system occurs, or a high flow level occurs. This immediate notification shall also occur when the primary system fails and the backup system automatically switches over. Assigned personnel shall be on call 24 hours a day and shall respond to the project site within one hour of the notification.
 12. The Contractor and Owner shall perform an operation demonstration of the temporary pumping system prior to beginning the new Work. The purpose of the operation demonstration is to verify that the temporary pumping system is capable of continuous operation through the duration of the Work without backup of the sewer system and test to ensure that the pipe system is in good condition. Bypass pumping shall be pressure tested to 1-1/2 times the working pressure.

13. Temporary pumping system shall remain fully operational until all modifications are complete and approved by Owner or Engineer.
14. Following successful completion of the new work, Contractor shall remove all temporary pumps, piping and appurtenances arrange for rental equipment pickup by vendor and restore area to proper operation and to the Owner's satisfaction.

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION (NOT APPLICABLE)

END OF SECTION 330133



**CONTRACT DOCUMENTS
AND
SPECIFICATIONS**

**Primary Effluent Pump Station
MCC Replacement**

FOR

TOWN BRANCH WWTP

Bid No. 42-2025

Prepared By: GRW Engineers

TABLE OF CONTENTS
CONTRACT DOCUMENTS

PART I	ADVERTISEMENT FOR BIDS
PART II	INFORMATION FOR BIDDERS
PART III	FORM OF PROPOSAL
PART IV	GENERAL CONDITIONS
PART V	SPECIAL CONDITIONS
PART VI	CONTRACT AGREEMENT
PART VII	PERFORMANCE AND PAYMENT BONDS
PART VIII	ADDENDA
PART IX	TECHNICAL SPECIFICATIONS AND PLANS

PART IX

TECHNICAL SPECIFICATIONS

Table of Contents

Division	Section Title
DIVISION 01 – GENERAL REQUIREMENTS	
011100	SUMMARY OF WORK
011400	GENERAL PROVISIONS
011410	SPECIAL PROVISIONS
012100	ALLOWANCES
012213	BASIS OF MEASUREMENT AND PAYMENT - LUMP SUM
012500	PRODUCTS AND SUBSTITUTIONS
013113	PROJECT COORDINATION
013213	CONTRACTORS SEQUENCE OF CONSTRUCTION SCHEDULE
013216	PROGRESS SCHEDULES
013323	SHOP DRAWINGS, PRODUCT DATA, SAMPLES AND RFI'S
017329	CUTTING AND PATCHING
017400	CLEANING
017700	PROJECT CLOSEOUT
017823	OPERATIONS AND MAINTENANCE MANUALS
017834	WARRANTIES AND BONDS
DIVISION 26 – ELECTRICAL	
260001	BASIC ELECTRICAL MATERIALS AND METHODS
260100	ELECTRICAL DEMOLITION
260519	CONDUCTORS AND CABLES
260526	SECONDARY GROUNDING
260529	SUPPORTING DEVICES AND HANGERS
260533	RACEWAYS
260534	BOXES
260553	ELECTRICAL IDENTIFICATION
262213	SMALL POWER AND MISCELLANEOUS TRANSFORMERS
262419	MOTOR CONTROL CENTERS
262700	WIRE CONNECTIONS AND CONNECTING DEVICES
262913	MOTOR CONTROL
264313	SURGE PROTECTIVE DEVICES
DIVISION 33 – UTILITIES	
330133	SEWER FLOW CONTROL

END OF TABLE OF CONTENTS

DIVISION 01

GENERAL REQUIREMENTS

SECTION 011100 – SUMMARY OF WORK

PART 1 - GENERAL

1.1 SCOPE OF WORK PERFORMED UNDER THIS CONTRACT

The scope of work is the total work shown to be performed on the contract drawings. This work shall be performed according to the contract specifications.

1.2 ENUMERATION OF DRAWINGS & SPECIFICATIONS

Following are the Drawings and Specifications which form the Contract Documents as set forth in Section 1.1 of the General Conditions:

Drawings

Sheet Number

All drawings included in the contract drawings can be found on the Sheet Index G-00-001

Specifications

See Table of Contents

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 011100

SECTION 011400 – GENERAL PROVISIONS

PART 1 - GENERAL

1.1 DESIGNATION OF PARTIES

- A. All references in the Specifications, Contract Documents and Drawings to "Owner" shall mean Lexington-Fayette Urban County Government; all references to "Engineer" shall mean GRW Engineers, Inc., 801 Corporate Drive, Lexington, Kentucky 40503.

1.2 EXPERIENCE CLAUSE

- A. Wherever experience is required of equipment manufacturers in manufacturing or in records of satisfactory operation for a specified period of time, in lieu of the experience, the manufacturer may furnish a 100 percent performance guarantee bond or a cash deposit. The bond or cash deposit provided by the manufacturer shall guarantee replacement of the equipment process in the event of failure or unsatisfactory service. The period of time for which the bond or cash deposit is required shall be the same as the experience period of time specified.

1.3 ACCESS TO INSPECTION OF WORK

- A. Representatives of the State Department of Health, the State Department for Natural Resources and Environmental Protection, local public health agencies, Owner, and Engineer shall at all times have full access to the project site for inspection of the work accomplished under this Contract and for inspection of all materials intended for use under the Contract. The Contractor shall provide proper facilities for such access and inspection.

1.4 PRE-CONSTRUCTION CONFERENCE

- A. The Contractor, Engineer and Owner, or their duly appointed representative, shall meet in a preconstruction conference prior to the initiation of construction to organize, schedule and determine responsibilities for the work as it pertains to each party of the Contract.

1.5 CONSTRUCTION SCHEDULE CHART

- A. Prior to start of any construction, the Contractor shall furnish a construction schedule or progress chart. The schedule or chart shall be subject to the approval of the Engineer and be of sufficient detail to show the chronological relationship of all activities of the project, the order in which the Contractor proposes to carry on the work, estimated starting and completion dates of major features, procurement of materials, and scheduling of equipment. The schedule shall be in a form suitable for appropriately indicating the percentage of work scheduled for completion at any time. The schedule shall be kept current and shall reflect completion of all work under the Contract within the specified time and in accordance with these Specifications.

1.6 CONSTRUCTION PROGRESS MEETINGS

- A. Monthly construction progress meetings shall be held virtually using Microsoft Teams Video Conferencing software. At the direction of the Owner, some meetings may be replaced with Monthly email updates while waiting for equipment delivery. The Contractor, appropriate subcontractors, the Engineer and the Owner shall meet to review construction progress, equipment or material submittals, construction schedules, etc.

1.7 PRECONSTRUCTION PHOTOGRAPHS

- A. Prior to construction and mobilization of equipment, Contractor shall take record photographs of all areas of the project site.
- B. In lieu of photographs, a videographic record may be made of the project site.

1.8 SPARE PARTS

- A. Spare parts for routine maintenance and minor repairs shall be provided for specified equipment items in the respective technical sections of these Specifications. Required spare parts to be provided are listed in the particular equipment Specifications.
- B. Parts shall be coated to protect them from a moist atmosphere. All spare parts shall be plainly tagged, marked for identification and reordering, and shall be delivered properly boxed. Required identification includes (but is not limited to):
 - 1. Name of the manufacturer or supplier of equipment.
 - 2. Name of the unit for which the part is intended.
 - 3. Name of the spare part.
 - 4. Name of the supplier of the spare part.
 - 5. Manufacturer's catalogue part number.
 - 6. Precautionary information.
 - 7. Any other identifying information deemed appropriate.
- C. All spare parts for a single equipment item shall be crated together in containers suitable for handling with hoisting equipment and designed for prolonged storage and stenciled to identify contents.
- D. Where oil or grease lubricated equipment is concerned, sufficient oil or grease of types recommended by the equipment manufacturer shall be supplied for one year's operation.
- E. The Contractor shall furnish and deliver the spare parts to the Owner at such time as the Owner may direct but prior to Contract expiration date. Furnish to the Engineer for record purposes a list of spare parts delivered to the Owner.

1.09 CLEANING

- A. The Contractor shall at all times keep the construction site and the surrounding area presentable to the public, and clean of rubbish caused by the Contractor's operation. At completion of the

work, the Contractor shall remove all the rubbish, all tools, equipment, temporary work and surplus materials, from and about the premises, and shall leave the site clean and ready for use.

- B. After completion of all work and before final acceptance of the work, the Contractor shall thoroughly clean all equipment and materials and shall remove all foreign matter such as grease, dirt, plaster, labels, stickers, etc., from the exterior of the piping, equipment and all associated fabrication.
- C. All waste and excess materials shall be disposed of off the project site and at no additional expense to the Owner. In no case shall waste materials (any removed concrete, piping, equipment, etc.) be buried on the site. Burning is not permitted.
- D. Upon completion of the project, the Contractor is responsible for leaving the project site in as good as or better condition than the original. This includes site grading, landscaping, replacement of sidewalks, driveways, curbs, mailboxes, clotheslines, fences, etc. and removal of all construction debris.

1.10 TAXES

- A. Proposals shall be made to include any applicable taxes on payrolls, materials, equipment, vehicles, utilities, etc., including State sales taxes and shall include compensation for such taxes on all work under this Contract.

1.11 COMPLIANCE WITH SAFETY REGULATIONS

- A. The equipment items furnished shall comply with all governing federal and state laws regarding safety, including all current requirements of the Occupational Safety and Health Act (OSHA). Contractor shall be solely responsible for job safety in accordance with all laws, regulations, methods, etc. of OSHA and the state.

1.12 MAINTENANCE AND OPERATIONS MANUAL

- A. Every piece of equipment furnished and installed shall be provided with complete maintenance and operations manuals. These shall be detailed in instructions to the Owner's personnel. They shall be attractively bound for the Owner's records. See 013323 and Section 017823 for requirements. The manuals shall be submitted to the Engineer for review as to adequacy and completeness. Provide four copies each, unless otherwise noted.

1.13 OBSTRUCTIONS

- A. In cases where storm sewers, sanitary sewers, gas lines, water lines, telephone lines, electric lines or other underground structures are encountered, they shall not be displaced or molested unless necessary, in which case they shall be replaced in as good a condition as found and as quickly as possible.
- B. The Contractor is responsible for notifying the appropriate utility companies and coordinating the protection of the utility. All such lines or underground structures damaged or molested in the

construction shall be replaced at the Contractor's expense, unless in the opinion of the Engineer, such damage was caused through no fault of the Contractor.

1.14 STORAGE FACILITIES

- A. The Contractor shall be responsible for proper and adequate storage of all materials and equipment used on the site. Any additional off-site space required for construction purposes shall be the Contractor's responsibility to obtain.
- B. Upon completion of the work, the Contractor shall remove all storage facilities, surplus materials and equipment and restore the site to its original condition, or to the finished condition as required by the Contract.

1.15 STANDARDS OF WORKMANSHIP

- A. Work of all crafts and trades shall be laid out to lines and elevations as established by the Contractor from the Drawings or from instructions by the Engineer. Unless otherwise shown, all work shall be plumb and level, in straight lines and true planes, parallel or square to the established lines and levels. The work shall be accurately measured and fitted to tolerance as established by the best practices of the crafts and trades involved and shall be as required to fit all parts of the work carefully and neatly together.

1.16 PERFORMANCE AND PAYMENT BONDS

- A. Performance and payment bonds, as specified in of the General Conditions, shall run for a period of one year after final acceptance of the work by the Owner. These bonds shall be executed on the forms provided as a part of the Contract Documents.

1.17 INITIAL STARTUP AND OPERATION

- A. The initial operation period provided for herein is to check and provide the satisfactory mechanical operation of the facilities. These requirements for startup and operation in no way relieve the Contractor of his responsibility with respect to guaranty of work as specified in the "General Conditions." The manufacturer's representatives shall be present during this period to instruct the operators in the care, operation and maintenance of the equipment. When the shakedown period is completed, the Owner will assume responsibility for maintenance and operation, provided that all major items of the Work are operating satisfactorily.
- B. If any or all of the facilities are not operating satisfactorily at the end of the shakedown period, the Contractor shall continue to maintain those facilities that are incomplete or not operating satisfactorily until they are complete and acceptable to the Owner. Maintenance by the Contractor shall include all mechanical facilities such as pumps and like equipment. Prior to startup, the Contractor will be required to prepare an operating schedule detailing the proposed startup and his plans for manpower and auxiliary facilities to be provided.

1.18 GUARANTY

- A. Except as otherwise specified herein, the Contractor shall guarantee all work from latent defects in materials, equipment and workmanship for one year from the date of substantial completion of the Contract as defined in Section 017700 of the technical Specifications.
- B. The Contractor agrees that he will obtain from the manufacturers of equipment and materials furnished under this Contract, guarantees against defective materials and workmanship, and if those guarantees furnished by the manufacturer do not extend for the term of one year from and after the date upon which the final estimate is formally approved by the Owner or other established date as set forth hereinbefore, he shall make the necessary arrangements and assume all cost for extending this guarantee for the required period.
- C. The Contractor shall promptly make such repairs or replacement as may be required under the above specified guarantee, and, when the repairs or replacements involve one or more items of installed equipment, shall provide the services of qualified factory-trained servicemen in the employ of the equipment manufacturers to perform or supervise the repairs or replacements.
- D. When the Engineer or the Owner deems it necessary, and so orders, such replacements or repairs under this section shall be undertaken by the Contractor within 24 hours after service of notice. If the Contractor unnecessarily delays or fails to make the ordered replacements or repairs within the time specified, or if any replacements or repairs are of such nature as not to admit of the delay incident to the service of a notice, then the Owner shall have the right to make such replacements or repairs, and the expense thereof shall be paid by the Contractor or deducted from any moneys due the Contractor.
- E. The Performance Bond shall remain in full force and effect throughout the Guaranty period.
- F. All warranties and guarantees remaining in effect at and beyond the Guaranty expiration date shall be relinquished and transferred to the Owner. Copies of such warranty/guaranty shall be submitted to the Engineer prior to date of the start of the guaranty period.

1.19 FLOOD INSURANCE

- A. Contractor is required to carry flood insurance for projects which are located in designated flood hazard areas unless Federal Flood Insurance is not available.

1.20 PROTECTION OF VEGETATION

- A. Reasonable care shall be taken during construction to avoid damage to vegetation. Ornamental shrubbery and tree branches shall be temporarily tied back, where appropriate, to minimize damage. Trees which receive damage to branches shall be trimmed of those branches to improve the appearance of the tree. Tree trunks receiving damage from equipment shall be treated with a tree dressing.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 011400

SECTION 011410 – SPECIAL PROVISIONS

PART 1 - GENERAL

1.1 SUBSURFACE DATA

No Geotechnical Investigation was completed for this project.

1.2 STARTUP AND OWNER TRAINING

After each piece of equipment is successfully started-up, the Contractor shall video record the Owner's training administered by the particular piece of equipment's factory Representative. The recording shall be in a format, such as MPEG or MP4, which is recognizable by most computers. A copy of the recording shall be given to the Owner on flash drive or external portable hard drive, or be made available as a secure downloadable file. The Contractor shall ensure that the Owner has received access to and can fully download the file.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 011410

SECTION 012100 – ALLOWANCES

PART 1 - GENERAL

1.1 SCOPE OF WORK

- A. This Section includes administrative and procedural requirements governing allowances. Certain items are specified in the Contract Documents by allowances. Allowances have been established in lieu of additional requirements and to defer selection of actual materials and equipment to a later date when additional information is available for evaluation. If necessary, additional requirements will be issued by Change Order.
- B. Types of allowances include the following:
 - 1. Lump-sum allowances.
- C. The following allowances shall be included in the Contractors bid:
 - 1. Bypass Pumping Lump Sum Allowance – Add **\$18,000**. This allowance shall cover rental cost of bypass pumping equipment for a period of 4-weeks. Work is described in specification Section 330133. Any unused allowance funds shall be turned over to Owner as part of a deductive change order at the conclusion of the project.
- D. Allowance shall include cost to Contractor of specific products and materials ordered by Owner or selected by Architect under allowance and shall include taxes, freight, and delivery to Project site.
- E. Unless otherwise indicated, Contractor's costs for receiving and handling at Project site, labor, installation, overhead and profit, and similar costs related to products and materials ordered by Owner or selected by Architect under allowance shall be included as part of the Contract Sum and not part of the allowance.

1.2 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section

1.3 SELECTION AND PURCHASE

- A. At the earliest practical date after award of the Contract, advise Engineer of the date when final selection and purchase of each product or system described by an allowance must be completed to avoid delaying the Work.
- B. At Engineer's request, obtain proposals for each allowance for use in making final selections and include recommendations that are relevant to performing the Work.
- C. Purchase products and systems selected by the Engineer from the designated supplier.

1.4 SUBMITTALS

- A. Submit proposals for purchase of products or systems included in allowances, in the form specified for Change Orders.
- B. Submit invoices or delivery slips to show actual quantities of materials delivered to the site for use in fulfillment of each allowance.
- C. Coordinate and process submittals for allowance items in same manner as for other portions of the Work.

1.5 COORDINATION

- A. Coordinate allowance items with other portions of the Work. Furnish templates as required to coordinate installation.

1.6 UNUSED MATERIALS

- A. Any amount of the allowance not used will be removed from total contract price during the final adjusting change order.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine products covered by an allowance promptly on delivery for damage or defects. Return damaged or defective products to manufacturer for replacement.

3.2 PREPARATION

- A. Coordinate materials and their installation for each allowance with related materials and installations to ensure that each allowance item is completely integrated and interfaced with related work.

END OF SECTION 012100

SECTION 012213 – BASIS OF MEASUREMENT AND PAYMENT - LUMP SUM

PART 1 - GENERAL

1.1 DESCRIPTION OF REQUIREMENTS

- A. The Contractor shall furnish all necessary labor, machinery, tools, apparatus, equipment, materials, service and other necessary supplies and perform all Work shown on the Drawings and/or described in the Specifications and Contract Documents at the lump sum price as indicated by the Bidder in the Bid.
- B. The Bidder declares that he has examined the site of the Work and informed himself fully in regard to all conditions pertaining to the place where the Work is to be done; that he has examined the Plans, Specification and Contract Documents for the Work, and has read all special provisions furnished prior to the opening of bids; and that he has further satisfied himself relative to the Work to be performed.
- C. Owner shall make payments on account of the Contract Price on the basis of Contractor's Applications for Payment as recommended by Engineer, on a monthly schedule during construction. All progress payments will be on the basis of the progress of the Work measured by the Schedule of Values established in Paragraph 13.1 of the General Conditions or, in the event there is no schedule of values, as provided in the General Requirements.
- D. The Progress Payments shall include the cost of Stored Materials, LESS an amount of retainage equal to 10 percent of their total cost. Stored materials are defined as materials and equipment not incorporated in the Work but delivered, suitably stored and accompanied by documentation satisfactory to Owner as provided in Paragraph 13.2 of the General Conditions.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 012213

SECTION 012500 – PRODUCTS AND SUBSTITUTIONS

PART 1 - GENERAL

1.1 DESCRIPTION OF REQUIREMENTS

- A. General: Substitution of materials and/or equipment is defined in Paragraph 5.7 of the General Conditions and more fully hereinafter.
- B. Definitions: Definitions used in this paragraph are not intended to negate the meaning of other terms used in the Contract Documents including such terms as "specialties", "systems", "structure", "finishes", "accessories", "furnishings", "special construction" and similar terms. Such terms are self-explanatory and have recognized meanings in the construction industry.
 - 1. "Products" are items purchased for incorporation in the Work, regardless of whether they were specifically purchased for the project or taken from the Contractor's previously purchased stock. The term "product" as used herein includes the terms "material", "equipment", "system" and other terms of similar intent.
 - 2. "Named Products" are products identified by use of the manufacturer's name for a product, including such items as a make or model designation, as recorded in published product literature, of the latest issue as of the date of the Contract Documents.
 - 3. "Materials" are products that must be substantially cut, shaped, worked, mixed, finished, refined or otherwise fabricated, processed, or installed to form units of work.
 - 4. "Equipment" is defined as a product with operational parts, regardless of whether motorized or manually operated, and in particular, a product that requires service connections such as wiring or piping.
- C. Substitutions: The Contractor's requests for changes in the products, materials, equipment and methods of construction required by the Contract Documents are considered requests for "substitutions" and are subject to the requirements specified herein. The following are not considered as substitutions:
 - 1. Revisions to the Contract Documents, where requested by the Owner, Engineer are considered as "changes" not substitutions.
 - 2. Substitutions requested during the bidding period, which have been accepted prior to the Contract Date, are included in the Contract Documents and are not subject to the requirements for substitutions as herein specified.
 - 3. Specified Contractor options on products and construction methods included in the Contract Documents are choices available to the Contractor and are not subject to the requirements for substitutions as herein specified.
 - 4. Except as otherwise provided in the Contract Documents, the Contractor's determination of and compliance with governing regulations and orders as issued by governing authorities do not constitute "substitutions" and do not constitute a basis for change orders.
- D. Standards: Refer to Division-01 section "Definitions and Standards" for applicability of industry standards to the products specified for the project, and for acronyms used in the text of the specification sections.

1.2 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-01 Specification sections, apply to Work of this Section.

1.3 SUBMITTALS

The information required to be furnished for evaluation of product substitution will be as follows:

- A. Performance capabilities and materials and construction details will be evaluated based upon conformance with the Specifications. Products that do not conform with the Specification shall not be accepted.
- B. Manufacturer's production and service capabilities, and evidence of proven reliability will be acceptable if the following is furnished.
 - 1. Written evidence that the manufacturer has not less than three years of experience in the design and manufacture of the substitute product.
 - 2. Written evidence of at least one application of a type and size similar to the proposed substitute product, in successful operation in a wastewater treatment plant for a period of at least one year.
 - 3. In lieu of furnishing evidence of a manufacturer's experience and successful operation of an application of the product to be substituted, the Contractor has the option of furnishing a cash deposit or bond which will guarantee replacement if the product furnished does not satisfy the other requirements specified in this section. The amount of each deposit or bond will be subject to approval.
- C. Specific reference to characteristics either superior or inferior to specified requirements will be evaluated based on their net effect on the project. Products with any characteristics inferior to those specified will not be acceptable unless offset by characteristics that, in the opinion of the Engineer, will cause the overall effect of the product on the project to be at least equal to that of those specified.

1.4 QUALITY ASSURANCE

- A. Source Limitations: To the fullest extent possible, provide products of the same generic kind, from a single source, for each unit of work.
- B. Compatibility of Options: Compatibility of products is a basic requirement of product selection. When the Contractor is given the option of selecting between two or more products for use on the project, the product selected must be compatible with other products previously selected, even if the products previously selected were also Contractor options. The complete compatibility between the various choices available to the Contractor is not assured by the various requirements of the Contract Documents but must be provided by the Contractor.
- C. The detailed estimate of operating and maintenance costs will be evaluated based on comparison with similar data on the specified products. Proposed substitute products which have an operating and maintenance cost that, in the opinion of the Engineer, exceeds that of the specified products will not be considered equal and will not be acceptable.

1.5 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. General: Deliver, store, and handle products in accordance with manufacturer's recommendations, using means and methods that will prevent damage, deterioration and loss, including theft. Control delivery schedules to minimize long-term storage at the site and to prevent overcrowding of construction spaces. In particular, coordinate delivery and installation to ensure minimum holding or storage times for items known or recognized to be flammable, hazardous, easily damaged, or sensitive to deterioration, theft and other sources of loss.
- B. Deliver products to the site in the manufacturer's sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting and installing.
- C. Store products at the site in a manner that will facilitate inspection and measurement of quantity or counting of units.
- D. Store heavy materials away from the project structure in a manner that will not endanger the supporting construction.

PART 2 - PRODUCTS

2.1 GENERAL PRODUCT COMPLIANCE

- A. General: Requirements for individual products are indicated in the Contract Documents; compliance with these requirements is in itself a Contract Requirement. These requirements may be specified in any one of several different specifying methods, or in any combination of these methods. These methods include the following:
 - 1. Proprietary.
 - 2. Descriptive.
 - 3. Performance.
 - 4. Compliance with Reference Standards.

Compliance with codes, compliance with graphic details, allowances, and similar provisions of the Contract Documents also have a bearing on the selection process.

- B. Procedures for Selecting Products: Contractor's options in selecting products are limited by requirements of the Contract Documents and governing regulations. They are not controlled by industry traditions or procedures experienced by the Contractor on previous construction projects.

2.2 SUBSTITUTIONS

- A. Conditions: Contractor's request for substitution will be received and considered when extensive revisions to the Contract Documents are not required, when the proposed changes are in keeping with the general intent of the Contract Documents, when the request are timely, fully documented and properly submitted, and when one or more of the following conditions is satisfied, all as judged by the Engineer; otherwise the requests will be returned without action except to record non-compliance with these requirements.

1. The Engineer will consider a request for substitution where the request is directly related to an "or equal" clause or similar language in the Contract Documents.
 2. The Engineer will consider a request for substitution where the specified product or method cannot be provided within the Contract Time. However, the request will not be considered if the product or method cannot be provided as a result of the Contractor's failure to pursue the work promptly or to coordinate the various activities properly.
 3. The Engineer will consider a request for substitution where the specified product or method cannot receive necessary approval by a governing authority, and the requested substitution can be approved.
 4. The Engineer will consider a request for a substitution where a substantial advantage is offered the Owner, in terms of cost, time, energy conservation or other considerations of merit, after deducting offsetting responsibilities the Owner may be required to bear. These additional responsibilities may include such considerations as additional compensation to the Engineer for redesign and evaluation services, the increased cost of other work by the Owner or separate contractors, and similar considerations.
 5. The Engineer will consider a request for substitution when the specified product or method cannot be provided in a manner which is compatible with other materials of the work, and where the Contractor certifies that the substitution will overcome the incompatibility.
 6. The Engineer will consider a request for substitution when the specified product or method cannot be properly coordinated with other materials in the work, and where the Contractor certifies that the proposed substitution can be properly coordinated.
 7. The Engineer will consider a request for substitution when the specified product or method cannot receive a warranty as required by the Contract Documents and where the Contractor certifies that the proposed substitution receive the required warranty.
 8. The Contractor shall reimburse the Owner any costs for review by the Engineer of proposed product substitutions which require major design changes, as determined by the Owner, to related of adjacent work made necessary by the proposed substitutions.
- B. Work-Related Submittals: Contractor's submittal of and the Engineer's acceptance of shop drawings, product data or samples which relate to work not complying with requirements of the Contract Documents, does not constitute an acceptable or valid request for a substitution, nor approval thereof.

2.3 GENERAL PRODUCT REQUIREMENTS

- A. General: Provide products that comply with the requirements of the Contract Documents and that are undamaged and, unless otherwise indicated, unused at the time of installation. Provide products that are complete with all accessories, trim, finish, safety guards and other devices and details needed for a complete installation and for the intended use and effect.
1. Standard Products: Where they are available, provide standard products of types that have been produced and used successfully in similar situations on other projects.
 2. Continued Availability: Where, because of the nature of its application, the Owner is likely to need replacement parts or additional amounts of a product at a later date, either for maintenance and repair or replacement, provide standard, domestically produced products for which the manufacturer has published assurances that the products and its parts are likely to be available to the Owner at a later date.

- B. Nameplates: Except as otherwise indicated for required labels and operating data, do not permanently attach or imprint manufacturer's or producer's nameplates or trademarks on exposed surfaces of products which will be exposed to view either in occupied spaces or on the exterior of the completed project.
1. Labels: Locate required product labels and stamps on a concealed surface or, where required for observation after installation, on an accessible surface which, in occupied spaces, is not conspicuous.
 2. Equipment Nameplates: Provide permanent nameplate on each item of service-connected or power operated equipment. Locate the nameplate on an easily accessible surface which is inconspicuous in occupied spaces. The nameplate shall contain the following information and other essential operating data.
 - a. Name of manufacturer
 - b. Name of product
 - c. Model number
 - d. Serial number
 - e. Capacity
 - f. Speed
 - g. Ratings

PART 3 - EXECUTION

3.1 INSTALLATION OF PRODUCTS

- A. General: Except as otherwise indicated in individual sections of these Specifications, comply with the manufacturer's instructions and recommendations for installation of the products in the applications indicated. Anchor each product securely in place, accurately located and aligned with other work. Clean exposed surfaces and protect surfaces as necessary to ensure freedom from damage and deterioration at Time of Acceptance.

END OF SECTION 012500

SECTION 013113 – PROJECT COORDINATION

PART 1 - GENERAL

1.1 DESCRIPTION OF REQUIREMENTS

- A. Minimum administrative and supervisory requirements necessary for coordination of work on the project include but are not necessarily limited to the following:
 - 1. Coordination and meetings.
 - 2. Limitations for use of site.
 - 3. Coordination of crafts, trades and subcontractors.
 - 4. General installation provisions.
 - 5. Cleaning and protection.
 - 6. Conservation and salvage.

1.2 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division 01 Specification sections, apply to work of this section.

1.3 COORDINATION AND MEETINGS

- A. Monthly construction progress meetings shall be held virtually using Microsoft Teams Video Conferencing software. At the direction of the Owner, some meetings may be replaced with Monthly email updates while waiting for equipment delivery. Representation at each meeting by every party currently involved in coordination or planning for the work of the entire project is requested. Meetings shall be conducted in a manner which will resolve coordination problems. Results of the meeting shall be recorded and copies distributed to everyone in attendance and to others affected by decisions or actions resulting from each meeting.

1.4 LIMITATIONS ON USE OF THE SITE

- A. Limitations on site usage as well as specific requirements that impact site utilization are indicated on the drawings and by other contract documents. In addition to these limitations and requirements, allocation of available space shall be administered equitably among entities needing both access and space so as to produce the best overall efficiency in performance of the total work of the project. Schedule deliveries so as to minimize space and time requirements for storage of materials and equipment on site.

1.5 COORDINATION OF CRAFTS, TRADES AND SUBCONTRACTORS

- A. The Contractor shall coordinate the work of all the crafts, trades and subcontractors engaged on the work, and shall have final responsibility as regards the schedule, workmanship and completeness of each and all parts of the work.

- B. All crafts, trades and subcontractors shall be made to cooperate with each other and with others as they may be involved in the installation of work which adjoins, incorporates, precedes or follows the work of another. It shall be the Contractor's responsibility to point out areas of cooperation prior to the execution of subcontractor agreements and the assignment of the parts of the work. Each craft, trade and subcontractor shall be made responsible to the Owner, for furnishing embedded items and giving directions, for doing all cutting and fitting and making all provisions for accommodating the work, and for protecting, patching, repairing and cleaning as required to satisfactorily perform the work.
- C. The Contractor shall be responsible for all cutting, digging and other action of their subcontractors and workmen. Where such action impairs the safety or function of any structure or component of the project, the Contractor shall make such repairs, alterations and additions as will, in the opinion of the Engineer, bring said structure or component back to its original design condition at no additional cost to the Owner.
- D. Each subcontractor is expected to be familiar with the General Requirements and all sections of the detailed Specifications for all other trades and to study all Drawings applicable to their work including Architectural and Structural Drawings, to the end that complete coordination between trades will be affected. Consult with the Engineer if conflicts exist on the Drawings.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 013113

SECTION 013213 – CONTRACTORS SEQUENCE OF CONSTRUCTION SCHEDULE

PART 1 - GENERAL

1.1 CONTRACTOR'S CONSTRUCTION SEQUENCE, SCHEDULE & PROVISIONS

The Contractor shall be responsible for all planning, coordination and execution of the work. The sequence of work shall provide assurances that reliable treatment plant operation will be maintained, and such sequences shall be approved by the Owner and the Engineer. No cost or schedule adjustments shall be given for changes to the construction sequence not approved by the Owner and Engineer.

The Contractor's proposed construction sequence schedule must allow the Owner to maintain full operation of their existing wastewater treatment plant during the construction period of the proposed expansion to the existing facilities. The Contractor shall take all necessary precautions to minimize if not eliminate, the disruption in wastewater treatment operations. When a disruption in the operations is required, the Contractor shall coordinate in advance (five days minimum) the interruption with the Owner and the Engineer. The interruptions shall be held to a minimum by wise and prudent coordination of the Contractor's work efforts. Some items of new construction will have to be completed prior to the removal from service and/or renovation of existing facilities.

The contractor shall be responsible for all damages brought about by the disruption of the operation if such disruptions are a direct cause of Contractor negligence and/or a failure of the Contractor to coordinate his work effort to minimize and/or eliminate disruptions in service.

Some general constraints to the Contractor's construction sequence are noted as follows:

- A. Partial Primary Effluent Pump Station shutdown shall be scheduled to coincide with the installation of a temporary backup bypass diesel-operated pumping system.
- B. The existing Primary Effluent Motor Control Center shall be replaced in stages. Due to the main-tie-tie-main breaker configuration of the existing MCC, the equipment can be partially demolished in sections allowing parts of the existing MCC to remain energized. This will allow two existing primary effluent pumps to remain online at all times. During the duration of the MCC replacement a backup diesel-operated bypass pumping system shall be in place to collect wastewater flowing to the pump station that exceeds the capacity of the two available primary effluent pumps. The bypass pumping system will be constructed to convey the liquid collected in the Primary Effluent Pump Station wet well to the Primary Effluent discharge channel. See sheet M-00-101. Temporary bypass piping and pumping are covered by a contract allowance. The Contractor is responsible for coordinating all bypass pumping activities onsite with the selected bypass pumping vendor.
- C. Existing wastewater treatment plant capacity must be maintained at all times during construction.
- D. Overflow or direct discharge of sewage to surface waterways or ground shall not be permitted.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 013213

SECTION 013216 – PROGRESS SCHEDULES

PART 1 - GENERAL

1.1 DESCRIPTION OF REQUIREMENTS

A. Scheduling Responsibilities:

1. In order to provide a definitive basis for determining job progress, a construction schedule of a type approved by the Owner will be used to monitor the project.
2. The Contractor shall be responsible for preparing the schedule and updating on a monthly basis. It shall at all times remain the Contractor's responsibility to schedule and direct his forces in a manner that will allow for the completion of the work within the contractual period.

B. Construction Hours:

1. No work shall be done between 6:00 p.m. and 7:00 a.m. nor on Saturdays, Sundays or legal holidays without the prior written permission of the Owner. However, emergency work may be done without prior written permission.
2. If the Contractor, for his convenience and at his own expense, should desire to carry on his work at night or outside the regular hours, he shall submit a written request to the Engineer and shall allow nine days for satisfactory arrangements to be made for inspecting the work in progress. If permission is granted, the Contractor shall light the different parts of the project as required to comply with all applicable federal, state, and local regulations. The Contractor shall also revise his schedule as appropriate at the next monthly schedule update meeting to reflect the changes in working hours.

C. Progress of the Work:

1. The work shall be started within 30 days following the Notice to Proceed and shall be executed with such progress as may be required to prevent delay to other Contractors or to the general completion of the project. The work shall be executed at such times and in or on such parts of the project, and with such forces, material and equipment, to assure completion of the work in the time established by the Contract.
2. The Contractor agrees that whenever it becomes apparent from the current monthly schedule update that delays have resulted and, hence, the Contract completion date will not be met or when so directed by the Owner, Contractor will take some or all of the following actions at no additional cost to the Owner:
 - a. Increase construction manpower in such quantities and crafts as will substantially eliminate the backlog of work.
 - b. Increase the number of working hours per shift, shifts per working day or days per week, the amount of construction equipment, or any combination of the foregoing to substantially eliminate the backlog of work.
 - c. Reschedule activities to achieve maximum practical concurrency of accomplishment of activities and comply with the revised schedule.
 - d. The Contractor shall submit to the Owner or the Owner's representative for review a written statement of the steps he intends to take to remove or arrest the delay to

the critical path in the accepted schedule. If the Contractor should fail to submit a written statement of the steps he intends to take or should fail to take such steps as required by the Contract, the Owner may direct the level of effort in manpower (trades), equipment, and work schedule (overtime, weekend and holiday work, etc.), to be employed by the Contractor in order to remove or arrest the delay to the critical path in the accepted schedule, and Contractor shall promptly provide such level of effort at no additional cost to the Owner.

1.2 CONSTRUCTION SCHEDULE

- A. Within ten calendar days of the Notice to Proceed, the Contractor shall submit to the Engineer five copies of his proposed schedule. The schedule will be the subject of a schedule review meeting with the Contractor, the Engineer and the Owner or the Owner's representative within one week of its submission. The Contractor will revise and resubmit the schedule until it is acceptable and accepted by the Owner or the Owner's representative.

1.3 SUBMITTAL SCHEDULE

- A. In addition to the above scheduling requirements, the Contractor will be required to submit a complete and detailed listing of anticipated submittals during the course of the Contract. The Contractor will coordinate his submittals with those of his Subcontractors and Suppliers and will identify each submittal by Contract drawing number and specification number. The anticipated submission date for each submittal must be indicated along with the date on which its return is anticipated. For planning purposes, the Engineer will usually return shop drawings 30 days after receipt. However, longer durations for review will not be considered a basis for a claim.
- B. The Submittal Schedule must be submitted within 20 working days of the Notice to Proceed and will be the subject of a special meeting with the Engineer and the Owner or the Owner's representative within one week of the schedule's submission. At that meeting, the Submittal Schedule will be reviewed for comprehensiveness and feasibility. The Engineer will adjust the projected return dates based on the need for more or less time for each submittal's review. The Submittal Schedule will then be accepted or revised as required.

1.4 SCHEDULE UPDATES

- A. Revisions to Schedule:
 - 1. The Schedule shall be formally revised if any of the following conditions are encountered:
 - a. When a delay in completion of any work item or sequence of work items results in an indicated extension of the project completion.
 - b. When delays in submittals or deliveries or work stoppages are encountered, which make replanning or rescheduling of the work necessary.
 - c. When the schedule does not represent the actual prosecution and progress of the project.

1.5 CONTRACT COMPLETION TIME

A. Causes for Extensions:

1. The Contract completion time will be adjusted only for causes specified in this Contract. In the event the Contractor requests an extension of any Contract completion date, he shall furnish such justification and supporting evidence as the Owner or the Owner's representative may deem necessary for a determination as to whether the Contractor is entitled to an extension of time under the provisions of this Contract. The Owner, with the assistance of the Engineer, will, after receipt of such justification and supporting evidence, make findings of fact and will advise the Contractor in writing thereof.

B. Requests for Time Extension:

1. Each request for change in any Contract completion date shall be initially submitted to the Owner within the time frame stated in the General Conditions. All information known to the Contractor at that time concerning the nature and extent of the delay shall be transmitted to the Owner at that time. Within the time frame stated in the General Conditions but before the date of final payment under this Contract, all information as required above concerning the delay must be submitted to the Owner. No time extension will be granted for requests which are not submitted within the foregoing time limits.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 013216

SECTION 013323 – SHOP DRAWINGS, PRODUCT DATA, SAMPLES AND RFI'S

PART 1 - GENERAL

1.1 DESCRIPTION OF REQUIREMENTS

- A. General: This section specifies procedural requirements for non- administrative submittals including shop drawings, product data, samples (when samples are specifically requested) and other miscellaneous work-related submittals. Shop drawings, product data, samples and other work-related submittals are required to amplify, expand and coordinate the information contained in the Contract Documents.
- B. Refer to other Division 01 sections and other Contract Documents for Specifications on administrative, non-work-related submittals. Such submittals include, but are not limited to the following items:
 - 1. Permits.
 - 2. Payment applications.
 - 3. Performance and payment bonds.
 - 4. Insurance certificates.
 - 5. Inspection and test reports.
 - 6. Schedule of values.
 - 7. Progress reports.
 - 8. Listing of subcontractors.
 - 9. Operating and Maintenance Manuals
- C. Engineer prefers initial submittals be in electronic media along with one paper copy for review. Engineer utilizes Newforma software and will provide Contractor with the necessary links and instructions for submittal purposes. Upon completion of the review process, Contractor shall print two copies of complete submittal, including transmittal cover page and stamp page, and deliver to Engineer.
 - 1. If Contractor does not have capability to submit electronic submittals, then Contractor shall submit a request to Engineer for waiver. In the event a waiver is granted, paper submittals shall be provided as directed by the Engineer.
- D. Submittals shall be checked and reviewed by the Contractor and stamped with Contractor's review stamp before submission to the Engineer. The review of the submittals by the Engineer shall not be construed as a complete check but will indicate only that the general method of construction and detailing is satisfactory. Review of such submittals will not relieve the Contractor of the responsibility for any errors which may exist as the Contractor shall be responsible for the dimensions and design of adequate connections, details, and satisfactory construction of all work.
- E. All Requests for Information (RFI) to Engineer shall be submitted electronically via Engineer's Newforma software.

1.2 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division 01 Specification sections, apply to work of this section.
- B. Section 017823 - Operating and Maintenance Manuals.

1.3 DEFINITIONS

- A. Shop drawings are technical drawings and data that have been specially prepared for this project, including but not limited to the following items:
 - 1. Fabrication and installation drawings.
 - 2. Setting diagrams.
 - 3. Shopwork manufacturing instructions.
 - 4. Templates.
 - 5. Patterns.
 - 6. Coordination drawings (for use on site).
 - 7. Schedules.
 - 8. Design mix formulas.
 - 9. Contractor's engineering calculations.

Standard information prepared without specific reference to a project is not considered to be shop drawings.

- B. Product data includes standard printed information on manufactured products that has not been specially-prepared for this project, including but not limited to the following items:
 - 1. Manufacturer's product specifications and installation instructions.
 - 2. Standard color charts.
 - 3. Catalog cuts.
 - 4. Roughing-in diagram and templates.
 - 5. Standard wiring diagrams.
 - 6. Printed performance curves.
 - 7. Operational range diagrams.
 - 8. Mill reports.
 - 9. Standard product operating and maintenance manuals.
- C. Samples, where specifically required, are physical examples of work, including but not limited to the following items:
 - 1. Partial sections of manufactured or fabricated work.
 - 2. Small cuts or containers of materials.
 - 3. Complete units of repetitively used materials.
 - 4. Swatches showing color, texture and pattern.
 - 5. Color range sets.
 - 6. Units of work to be used for independent inspection and testing.
- D. Miscellaneous submittals are work-related, non-administrative submittals that do not fit in the three previous categories, including, but not limited to the following:

1. Specially prepared and standard printed warranties.
2. Maintenance agreements.
3. Workmanship bonds.
4. Survey data and reports.
5. Testing and certification reports.
6. Record drawings.
7. Field measurement data.

1.4 SUBMITTAL PROCEDURES

- A. General: Refer to the General Conditions and Paragraph 1.1 hereinbefore for basic requirements for submittal handling.
- B. Coordination: Coordinate the preparation and processing of submittals with the performance of the work. Coordinate each separate submittal with other submittals and related activities such as testing, purchasing, fabrication, delivery and similar activities that require sequential activity.
 1. It is the Contractor's responsibility to make such field measurements as are needed to base submittals on actual field conditions to assure proper connection, fit, function and performance of all work and equipment in the execution of the contract work.
 2. Coordinate the submittal of different units of interrelated work so that one submittal will not be delayed by the Architect/Engineer's need to review a related submittal. The Architect/Engineer reserves the right to withhold action on any submittal requiring coordination with other submittals until related submittals are forthcoming.
- C. Coordination of Submittal Times: Prepare and transmit each submittal to the Architect/Engineer sufficiently in advance of the scheduled performance of related work and other applicable activities. Transmit different kinds of submittals for the same unit of work so that processing will not be delayed by the Architect/Engineer's need to review submittals concurrently for coordination.
- D. Review Time: Allow sufficient time so that the installation will not be delayed as a result of the time required to properly process submittals, including time for resubmittal, if necessary. Advise the Architect/Engineer on each submittal, as to whether processing time is critical to the progress of the work and if the work would be expedited if processing time could be shortened.
 1. Allow a longer time period where processing must be delayed for coordination with subsequent submittals. The Architect/Engineer will advise the Contractor promptly when it is determined that a submittal being processed must be delayed for coordination.
 2. No extension of time will be authorized because of the Contractor's failure to transmit submittals to the Architect/Engineer sufficiently in advance of the work.
- E. Submittal Preparation: Mark each submittal with a permanent label for identification. Provide the following information on the label for proper processing and recording of action taken.
 1. Project name.
 2. Date.
 3. Name and address of Architect/Engineer.
 4. Name and address of Contractor.
 5. Name and address of subcontractor.

6. Name and address of supplier.
 7. Name of manufacturer.
 8. Number and title of appropriate specification section.
 9. Drawing number and detail references, as appropriate.
 10. Similar definitive information as necessary.
- F. All submittals shall be referenced to the applicable item, section and division of the Specifications, and to the applicable drawing(s) or drawing schedule(s). Include only one item in a submittal.
- G. The Contractor shall review and check submittals and shall indicate his review by initials and date. Any submittal received without this evidence of review shall be returned to the Contractor without review.
- H. If the submittals deviate from the Contract Drawings and/or Specifications, the Contractor shall advise the Engineer in writing of the deviation and the reasons therefore.
- I. Submittal Transmittal: Package each submittal appropriately for transmittal and handling. Transmit each submittal from the Contractor to the Architect/Engineer, and to other destinations as indicated, by use of a transmittal form. Submittals received from sources other than the Contractor will be returned to the sender "without action".
- J. Electronic Submittals: If the electronic method of submittals is agreed to by Contractor, Engineer, and Owner, the format and procedures will be determined and implemented prior to any submittals. Submittals will be processed through "Newforma" software. Each item of the submittal documents shall be in .pdf format and shall be oriented so that they are read from upper left corner to lower right corner, with no rotation of said document being required after receiving it. The .pdf file shall be named so that it describes the item being submitted. All other requirements herein are part of the electronic submittal process with the exception of the duplicate copies. Contractor stamp indicating review and any comments or notes must be on the .pdf submittal.

1.5 SPECIFIC SUBMITTAL REQUIREMENTS

- A. Shop drawings shall be prepared by a qualified detailer. Details shall be identified by reference to sheet and detail numbers shown on Contract Drawings. Where applicable, show fabrication, layout, setting and erection details.

Shop drawings are defined as original drawings prepared by the Contractor, subcontractors, suppliers, or distributors performing work under this Contract. Shop drawings illustrate some portion of the work and show fabrication, layout, setting or erection details of equipment, materials and components. The Contractor shall, except as otherwise noted, have prepared the number of reviewed copies required for distribution plus four which will be retained by the Engineer. Shop drawings shall be folded to an approximate size of 8-1/2 inches x 11 inches and in such manner that the title block will be located in the lower right-hand corner of the exposed surface.

- B. Project data shall include manufacturer's standard schematic drawings modified to delete information which is not applicable to the project, and shall be supplemented to provide

additional information applicable to the project. Each copy of descriptive literature shall be clearly marked to identify pertinent information as it applies to the project.

- C. Where samples are required, they shall be adequate to illustrate materials, equipment or workmanship, and to establish standards by which completed work is judged. Provide sufficient size and quantity to clearly illustrate functional characteristics of product and material, with integrally related parts and attachment devices, along with a full range of color samples.
- D. In the event the Engineer does not specifically reject the use of material or equipment at variance to that which is shown on the Drawings or specified, the Contractor shall, at no additional expense to the Owner, and using methods reviewed by the Engineer, make any changes to structures, piping, controls, electrical work, mechanical work, etc., that may be necessary to accommodate this equipment or material. Should equipment other than that on which design drawings are based be accepted by the Engineer, shop drawings shall be submitted detailing all modification work and equipment changes made necessary by the substituted item.
- E. Additional information on particular items, such as special drawings, schedules, calculations, performance curves, and material details, shall be provided when specifically requested in the technical Specifications.
- F. Submittals for all electrically operated items (including instrumentation and controls) shall include complete size, color coding, all terminations and connections, and coordination with related equipment.
- G. Equipment shop drawings shall indicate all factory or shop paint coatings applied by suppliers, manufacturers and fabricators; the Contractor shall be responsible for insuring the compatibility of such coatings with the field-applied paint products and systems.
- H. Fastener specifications of manufacturer shall be indicated on equipment shop drawings.
- I. Where manufacturers brand names are given in the Specifications for building and construction materials and products, such as grout, bonding compounds, curing compounds, masonry cleaners, waterproofing solutions and similar products, the Contractor shall submit names and descriptive literature of such materials and products he proposes to use in this Contract.
- J. No material shall be fabricated or shipped unless the applicable drawings or submittals have been reviewed by the Engineer and returned to the Contractor.
- K. All bulletins, brochures, instructions, parts lists, and warranties package with and accompanying materials and products delivered to and installed in the project shall be saved and transmitted to the Owner through the Engineer.

1.6 REVIEW STATUS

- A. Submittals will be returned, stamped with the following classifications: "Reviewed", "Furnish as Corrected", "Revise and Resubmit", "Rejected", or "Submit Specified Item".
- B. In some instances, corrections to dimensions or clarification notations will be required, in which case the drawings will be marked "Furnish as Corrected." These shop drawings will not be required to be resubmitted for further approval. If the supplier makes additional modifications

after receiving a "Furnish as Corrected" disposition, the drawings must then be resubmitted for review.

- C. If the shop drawing is returned with the notation "Revise and Resubmit", the Contractor shall promptly make the revisions indicated and repeat the submittal approval procedure.
- D. If the shop drawing is returned with the notation "Submit Specified Item", this indicates that the submittal does not meet the specification, will not be reviewed, and is unacceptable. Upon return of a drawing so marked, the Contractor shall repeat the initial approval procedure, submitting acceptable materials or equipment.
- E. The "Rejected" notation is used to indicate materials or equipment that are not acceptable and are not included in the project.

1.7 REMINDER OF CONTRACTOR RESPONSIBILITIES

- A. Verify field measurements, field construction criteria, catalog numbers, and similar data.
- B. Coordinate each submittal with requirements of work and of Contract Documents.
- C. Notify Engineer, in writing at time of submission, of deviations in submittals from requirements of Contract Documents.
- D. Begin no work, and have no material or products fabricated or shipped which requires submittals until return of submittals with Engineer's stamp and initials or signature indicating review.
- E. Upon review and closeout of a submittal, Contractor shall print two copies of complete submittal, including transmittal cover page and stamp page, and deliver to Engineer.
- F. It is emphasized that the review of shop drawings by the Engineer is for general conformance to the Contract Drawings and Specifications, but subject to the detailed requirements of the Contract Drawings and Specifications. Although the Engineer may check submitted data in more or less detail, such checking is an effort to discover errors and omissions in the Contractor's drawings and to assist the Contractor in coordinating and expediting the work, but shall in no way relieve the Contractor of the obligation and responsibility to properly coordinate the work, and to Engineer the details of the work in such a manner, that the purpose and intent of the Contract will be achieved nor shall any such detailed checking by the Engineer be construed as placing on himself or on the Owner, any responsibility for the accuracy, proper fit, functioning or performance of any phase of the work included in this Contract. The Contractor is responsible for confirmation and correlation of dimensions at the job site; for information that pertains solely to the fabrication processes or to the techniques of construction; for the coordination of the work of all trades; and for performance of their work in a safe and satisfactory manner.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 013323

SECTION 017329 – CUTTING AND PATCHING

PART 1 - GENERAL

1.1 DESCRIPTION OF REQUIREMENTS

- A. Definition: "Cutting and patching" includes cutting into existing construction to provide for the installation or performance of other Work and subsequent fitting and patching required to restore surfaces to their original condition.
- B. Cutting and patching" is performed for coordination of the work, to uncover work for access or inspection, to obtain samples for testing, to permit alterations to be performed or for other similar purposes upon written instructions of the Engineer.
- C. Cutting and patching is performed during the manufacture of products, or during the initial fabrication. Erection or installation processes are not considered to be "cutting and patching" under this definition. Drilling of holes to install fasteners and similar operations are also not considered to be "cutting and patching".
- D. "Cutting and Patching" includes removal and replacement of Work not conforming to requirements of the Contract Documents, removal and replacement of defective Work, and uncovering Work to provide for installation of ill-timed Work.
- E. No Work shall be endangered by cutting or altering Work or any part of it.

1.2 RELATED DOCUMENTS

- A. Drawing and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification sections, apply to Work of this Section.

1.3 SUBMITTALS

- A. Prior to cutting which affects structural safety of Project, submit written notice to the Engineer, requesting consent to proceed with cutting, including:
 - 1. Identification of Project.
 - 2. Description of affected work.
 - 3. Necessity for cutting.
 - 4. Effect on structural integrity of Project.
 - 5. Description of proposed work. Designate:
 - a. Scope of cutting and patching.
 - b. Trades to execute work.
 - c. Products proposed to be used.
 - d. Extent of refinishing.
 - 6. Alternatives to cutting and patching.

- B. Should conditions of work, or schedule, indicate change of materials or methods, submit written recommendation to the Engineer, including:
 - 1. Conditions indicating change.
 - 2. Recommendations for alternative materials or methods.
 - 3. Submittals as required for Substitutions.
- C. Submit written notice to the Engineer, designating time Work will be uncovered, to provide for observation.

1.4 QUALITY ASSURANCE

- A. Requirements for Structural Work: Do not cut and patch structural Work in a manner that would result in a reduction of load-carrying capacity or of load-deflection ratio.
- B. Operational and Safety Limitations: Do not cut and patch operational elements or safety related components in a manner that would result in a reduction of their capacity to perform in the manner intended, including energy performance, or that would result in increased maintenance, or decreased operational life or decreased energy.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. For replacement of work removed, comply with Specifications for type of work to be done.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Before cutting, examine the surfaces to be cut and patched and the conditions under which the Work is to be performed. If unsafe or otherwise unsatisfactory conditions are encountered, take corrective action before proceeding with the Work.

3.2 PREPARATION

- A. Temporary Support: To prevent failure, provide temporary support of Work to be cut. Provide shoring, bracing and support as required to maintain structural integrity of project.
- B. Protection: Protect other Work during cutting and patching to prevent damage. Provide protection from adverse weather conditions for that part of the project that may be exposed during cutting and patching operations. Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas. Take precautions not to cut existing pipe, conduit

or duct serving the building but scheduled to be relocated until provisions have been made to bypass them.

3.3 PERFORMANCE

- A. General: Employ skilled workmen to perform cutting and patching Work. Except as otherwise indicated or as approved by the Engineer, proceed with cutting and patching at the earliest feasible time and complete Work without delay.
- B. Cutting: Cut the Work using methods that are least likely to damage work to be retained or adjoining Work. Where possible, review proposed procedures with the original installer; comply with original installer's recommendations.
 - 1. In general, where cutting is required use hand or small power tools designed for sawing or grinding, not hammering and chopping. Cut through concrete and masonry using a cutting machine such as a carborundum saw or core drill to insure a neat hole. Cut holes and slots neatly to size required with minimum disturbance of adjacent work. To avoid marring existing finished surfaces, cut or drill from the exposed or finished side into concealed surfaces. Temporarily cover openings when not in use.
 - 2. Comply with requirements of applicable sections of Division 02 where cutting and patching requires excavating and backfilling.
 - 3. By-pass utility services such as pipe and conduit, before cutting, where such utility services are shown or required to be removed, relocated or abandoned. Cut-off conduit and pipe in wall or partitions to be removed. After by-pass and cutting, cap, valve or plug and seal tight remaining portion of pipe and conduit to prevent entrance of moisture or other foreign matter.
- C. Patching: Patch with seams which are durable and as invisible as possible. Comply with specified tolerances for the Work.
 - 1. Where feasible, inspect and test patched areas to demonstrate integrity of work.
 - 2. Restore exposed finishes of patched areas and where necessary, extend finish restoration into retained adjoining Work in a manner which will eliminate evidence of patching and refinishing.
 - 3. Execute fittings and adjustment of products to provide finished installations to comply with specified tolerances.
 - 4. Restore work which has been cut or removed; install new products to provide completed work in accord with requirements of Contract Documents.
 - 5. Refinish entire surfaces as necessary to provide an even finish.
 - a. Continuous Surfaces: To nearest intersection.
 - b. Assembly: Entire refinishing.

3.4 CLEANING

- A. Thoroughly clean areas and spaces where Work is performed or used as access to work. Remove completely point, mortar, oils, putty and items of similar nature. Thoroughly clean piping, conduit and similar features before painting or other finishing is applied. Restore damaged pipe covering to its original condition.

END OF SECTION 017329

SECTION 017400 - CLEANING

PART 1 - GENERAL

1.1 DESCRIPTION OF REQUIREMENTS

- A. Maintain premises free from accumulations of waste, debris, and rubbish.
- B. At completion of work, remove waste materials, rubbish, tools, equipment, machinery and surplus materials, and clean all exposed surfaces. Leave project clean and ready for occupancy.

1.2 RELATED DOCUMENTS

- A. Cutting and Patching: Section 017329.
- B. Project Closeout: Section 017700.
- C. Cleaning for Specific Products of Work: Specification Section for that work.

1.3 SAFETY REQUIREMENTS

- A. Hazards Control:
 - 1. Store volatile wastes in covered metal containers and remove from premises daily.
 - 2. Prevent accumulation of wastes which create hazardous conditions.
 - 3. Provide adequate ventilation during use of violative noxious substances.
- B. Conduct cleaning and disposal operations to comply with local ordinances and anti-pollution laws.
 - 1. Do not burn or bury rubbish and waste materials on project site.
 - 2. Do not dispose of volatile wastes such as mineral spirits, oil, or paint thinner in storm or sanitary drains.
 - 3. Do not dispose of wastes into streams or waterways.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Use only cleaning materials recommended by manufacturer of surface to be cleaned.
- B. Use cleaning materials only on surfaces recommended by cleaning material manufacturer.

PART 3 - EXECUTION

3.1 DURING CONSTRUCTION

- A. Execute cleaning to ensure that building, grounds, and public properties are maintained free from accumulations of waste materials and rubbish.
- B. Wet down dry materials and rubbish to lay dust and prevent blowing dust.
- C. At reasonable intervals during progress of work, clean site and public properties, and dispose of waste materials, debris and rubbish.
- D. Provide on-site containers for collection of waste materials, debris and rubbish.
- E. Remove waste materials, debris and rubbish from site and legally dispose of at public or private dumping areas off Owner's property.
- F. Handle materials in a controlled manner with as few handlings as possible; do not drop or throw materials from heights.
- G. Schedule cleaning operations so that dust and other contaminants resulting from cleaning process will not fall on wet, newly painted surfaces.

3.2 FINAL CLEANING

- A. Employ experienced workmen, or professional cleaners, for final cleaning.
- B. In preparation for substantial completion or occupancy, conduct final inspection of sight-exposed interior and exterior surfaces, and of concealed spaces.
- C. Remove grease, dust, dirt, stains, labels, fingerprints, and other foreign materials, from sight-exposed interior or exterior finished surfaces; polish surfaces so designated to shine finish.
- D. Repair, patch and touch up marred surfaces to specified finish, to match adjacent surfaces.
- E. Broom clean paved surfaces; rake clean other surfaces of grounds.
- F. Maintain cleaning until project, or portion thereof, is occupied by Owner.

END OF SECTION 017400

SECTION 017700 – PROJECT CLOSEOUT

PART 1 - GENERAL

1.1 RELATED REQUIREMENTS SPECIFIED ELSEWHERE

- A. Liquidated Damages: Supplemental General Conditions
- B. Cleaning: Section 017400
- C. Project Record Documents: Section 017839

1.2 SUBSTANTIAL COMPLETION

- A. To initiate project closeout procedures, the Contractor shall submit the following:
 - 1. Written certification to Engineer that project is Substantially Complete.
 - 2. List of major items to be completed or corrected.
- B. Engineer will make an inspection within seven days after receipt of certification, together with Owner's Representative.
- C. Should Engineer consider that work is Substantially Complete:
 - 1. Contractor shall prepare, and submit to Engineer, a list of items to be completed or corrected, as determined by the inspection.
 - 2. Engineer will prepare and issue a Certificate of Substantial Completion, containing:
 - a. Date of Substantial Completion.
 - b. Contractor's list of items to be completed or corrected, verified and amended by Engineer.
 - c. The time within which Contractor shall complete or correct work of listed items.
 - d. Time and date Owner will assume possession of work or designated portion thereof.
 - e. Responsibilities of Owner and Contractor for:
 - 1) Insurance
 - 2) Utilities
 - 3) Operation of Mechanical, Electrical, and Other Systems.
 - 4) Maintenance and Cleaning.
 - 5) Security.
 - f. Signatures of:
 - 1) Engineer
 - 2) Contractor
 - 3) Owner

3. Owner occupancy of Project or Designated Portion of Project:
 - a. Contractor shall:
 - 1) Obtain certificate of occupancy.
 - 2) Perform final cleaning in accordance with Section 017400.
 - b. Owner will occupy Project, under provisions stated in Certificates of Substantial Completion.
 4. Contractor: Complete work listed for completion or correction, within designated time.
- D. Should Engineer consider that work is not Substantially Complete:
1. He shall immediately notify Contractor, in writing, stating reasons.
 2. Contractor: Complete work, and send second written Engineer, certifying that Project, or designated portion of Project is substantially complete.
 3. Engineer will reinspect work.
- E. Should Engineer consider that work is still not finally complete:
1. He shall notify Contractor, in writing, stating reasons.
 2. Contractor shall take immediate steps to remedy the stated deficiencies and send third written notice to the Engineer certifying that the work is complete.
 3. Engineer and Owner will reinspect work at Contractor's expense.

1.3 FINAL INSPECTION

- A. Contractor shall submit written certification that:
1. Contract Documents have been reviewed.
 2. Project has been inspected for compliance with Contract Documents.
 3. Work has been completed in accordance with Contract Documents.
 4. Equipment and systems have been tested in presence of Owner's Representative and are operational.
 5. Project is completed, and ready for final inspection.
- B. Engineer will make final inspection within seven days after receipt of certification.
- C. Should Engineer consider that work is finally complete in accordance with requirements of Contract Documents, he shall request Contractor to make Project Closeout submittals.
- D. Should Engineer consider that work is not finally complete:
1. He shall notify Contractor in writing, stating reasons.
 2. Contractor shall take immediate steps to remedy the stated deficiencies and send second written notice to Engineer certifying that work is complete.
 3. Engineer will reinspect work.

1.4 CLOSEOUT SUBMITTALS

- A. Project Record Documents: To requirements of Section 017839.
- B. Guarantees, Warranties and Bonds: To requirements of particular technical Specifications and Section 017834.

1.5 INSTRUCTION

- A. Instruct Owner's personnel in operation of all systems, mechanical, electrical, and other equipment.

1.6 FINAL APPLICATION FOR PAYMENT

- A. Contractor shall submit final applications in accordance with requirements of General Conditions.

1.7 FINAL CERTIFICATE FOR PAYMENT

- A. Engineer will issue final certificate in accordance with provisions of general conditions.
- B. Should final completion be materially delayed through no fault of Contractor, Engineer may issue a Semi-Final Certificate for Payment.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 017700

SECTION 017823 – OPERATIONS AND MAINTENANCE MANUALS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Compile product data and related information appropriate for Owner's maintenance and operation of equipment furnished under the Contract. Prepare operating and maintenance data as specified.
- B. In addition to maintenance and operations data, the manufacturer's printed recommended installation practice shall also be included. If not part of the operations and maintenance manual, separate written installation instructions shall be provided, serving to assist the Contractor in equipment installation.
- C. Related requirements specified elsewhere:
 - 1. Shop Drawings, Product Data and Samples: Section 013323
 - 2. Project Closeout: Section 017700
 - 3. Project Record Documents: Section 017839
 - 4. Warranties and Bonds: Section 017834

1.2 QUALITY ASSURANCE

- A. Preparation of data shall be done by personnel:
 - 1. Trained and experienced in maintenance and operation of the described products.
 - 2. Completely familiar with requirements of this Section.
 - 3. Skilled as a technical writer to the extent required to communicate essential data.
 - 4. Skilled as a draftsman competent to prepare required drawings.

1.3 SUBMITTAL SCHEDULE

- A. Submit one printed copy of operation and maintenance data for each item of equipment prior to 80 percent completion of the Contract. Binder is not required for Preliminary submittals. Digital submittal is **NOT** required for preliminary review.
- B. Upon approval of **ALL** O&M submittal items, the complete manual shall be assembled as described in the following sections.
- C. The complete, assembled Operation and Maintenance Manual shall be submitted 10 days prior to final inspection or acceptance to the Owner. Provide a total of two hard copies and one digital copy of the complete manual. Do not submit individual equipment items as final O&M manuals. The final submittal shall be the **COMPLETE** assembled manual, with a master table of contents included.

1.4 FORM OF SUBMITTALS

- A. Format: Preliminary submittals may be made of each individual item of equipment. The final O & M Manual shall be assembled by combining the individual equipment submittals in one or more 3-ring binder(s). Large equipment operating and maintenance instructions may be contained in their individual binder(s). Smaller O&M instructions shall be assembled in a binder, with the sections separated by a tabbed divider page, and a table of contents.
1. Size: 8-1/2 inches x 11 inches.
 2. Paper: 20 pound minimum, white, for typed pages.
 3. Text: Manufacturer's printed data, or neatly typewritten.
 4. Photocopies must be clear and legible.
 5. Drawings:
 - a. Provide reinforced punched binder tab, bind in with text.
 - b. Fold large drawings to the size of the text pages where feasible.
 - c. For flow or piping diagrams that cannot be detailed on the standard size drawings, a larger, appropriate size drawing may be submitted and supplied in a properly marked map packet.
 6. Provide fly-leaf for each separate product, or each piece of operating equipment.
 - a. Provide typed description of product, and major component parts of equipment.
 - b. Provide indexed tabs.
 7. Cover: Identify each volume with types or printed title "OPERATING AND MAINTENANCE INSTRUCTIONS". List:
 - a. Title of Project.
 - b. Identity of separate structure as applicable.
 - c. Identity of general subject matter covered in the manual.
- C. Binders:
1. Commercial quality, durable and cleanable, three-ring binders, with oil and moisture resistant hard covers.
 3. Imprinted on the front cover and side of each binder shall be the name of the treatment plant or project, the Contract Number and the title of equipment.
 4. Binders shall be new and not recycled from a prior data manual.

1.5 CONTENTS OF MANUAL

- A. Table of Contents: Each item shall be placed in a logical sequential order, according to the operating process of the facility as shown on the Hydraulic Profile in the Contract Drawings.
- B. Content, for each unit of equipment and system, as appropriate:
1. Process Description: Detailed description of the process and operation functions as applicable.

2. Component Instructions: Instructions for all components of the equipment whether manufactured by the supplier or not, including valves, controllers and other miscellaneous components.
3. Component Data: Description of unit and component parts.
 - a. Function, normal operating characteristics, and limiting conditions.
 - b. Performance curves, engineering data and tests.
 - c. Complete nomenclature and commercial number of all replaceable parts.
 - d. Exploded and/or sectional drawing views.
 - e. Piping diagrams numbered to correspond to the installation.
 - f. Equipment model number and serial number.
4. Control and Wiring Diagrams:
 - a. Internal and external wiring diagrams numbered to correspond to the installation.
 - b. Control circuit diagrams
 - c. One line diagrams
 - d. P&ID drawings
 - e. As-installed control diagrams by controls supplier.
5. Operating procedures:
 - a. Startup, break-in, routine and normal operating instructions.
 - b. Regulation, control, stopping, shutdown and emergency instructions.
 - c. Summer and winter operating instructions.
 - d. Special operating instructions.
 - e. Description of sequence of operation by control supplier.
6. Maintenance Procedures:
 - a. Routine operations.
 - b. Guide to "trouble-shooting".
 - c. Disassembly, repair and reassembly.
 - d. Alignment, adjusting and checking.
 - e. Equipment parts list.
 - f. Original manufacturer's parts list, illustrations, assembly drawings and diagrams required for maintenance.
 - 1) Predicted life of parts subject to wear.
 - g. Local service center.
7. Lubrication and Service schedule.
 - a. Preventative maintenance schedule.
 - b. Component lubrication and servicing interval schedule.
 - c. List of lubricants and/or filters required.
 - d. Lubrication and servicing procedures.
8. Recommended spare parts list and quantities.

9. Guide to "trouble-shooting".
 10. Plant specific instructions:
 - a. Each Contractor's coordination drawings.
 - b. As-installed color coded piping diagrams.
 - c. Detailed specific "Sequence of Operation" for the constructed plant or project.
 - d. Charts of valve tag numbers, if appropriate, with the location and function of each valve.
 11. Plant specific startup and shutdown procedures.
 12. Detailed instructions for emergency operation
 13. Other data as required under pertinent sections of Specifications.
- C. Content, for each electrical system, as appropriate:
1. Description of system and component parts.
 - a. Function, normal operating characteristics, and limiting conditions.
 - b. Performance curves, engineering data and tests.
 - c. Complete nomenclature and commercial number of replacement parts.
 2. Circuit directories of panel boards.
 - a. Electrical service.
 - b. Controls.
 - c. Communications.
 3. As-installed color-coded wiring diagrams.
 4. Operating procedures:
 - a. Routine and normal operating instructions.
 - b. Sequences required.
 - c. Special operating instructions.
 5. Maintenance procedures:
 - a. Routine operations.
 - b. Guide to "trouble-shooting".
 - c. Disassembly, repair and reassembly.
 - d. Adjustment and checking.
 6. Manufacturer's printed operating and maintenance instructions.
 7. List of original manufacturer's recommended spare parts, manufacturer's current prices, and recommended quantities to be maintained in storage.
- D. Prepare and include additional data when the need for such data becomes apparent during instruction of Owner's personnel.
- E. Additional requirements for operating and maintenance data: The respective section of Specifications.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 017823

Manufacturer Submittals /

Project Name:

Project Number:

[illegible]

SECTION 017834 – WARRANTIES AND BONDS

PART 1 - GENERAL

1.1 DESCRIPTION OF REQUIREMENTS

- A. Compile specified warranties and bonds.
- B. Compile specified service and maintenance contracts.
- C. Co-execute submittals when so specified.
- D. Review submittals to verify compliance with Contract Documents.
- E. Submit to Engineer for review and transmittal to Owner. **Comply with provisions of Section 013323.**

1.2 RELATED DOCUMENTS

- A. Bid Bond: Instructions to Bidders.
- B. Performance and Payment Bonds: General Conditions and Supplemental General Conditions.
- C. Guaranty: General Conditions and Supplemental General Conditions.
- D. General Warranty of Construction: General Conditions.
- E. Project Closeout: Section 017700.
- F. Warranties and Bonds required for specific products: As listed in technical specifications in these Contract Documents herein.
- G. Provisions of Warranties and Bonds, Duration: Respective specification sections for particular products.

1.3 SUBMITTALS REQUIREMENTS

- A. Assemble warranties, bonds and service and maintenance contracts, executed by each of the respective manufacturers, suppliers and subcontractors.
- B. Furnish two original signed copies.
- C. Table of Contents: Neatly typed, in orderly sequence. Provide complete information for each item.
 - 1. Product, equipment or work item.

2. Firm name, address and telephone number.
3. Scope
4. Date of beginning of warranty, bond or service and maintenance contract.
5. Duration of warranty, bond or service and maintenance contract.
6. Provide information for Owner's personnel:
 - a. Proper procedure in case of failure.
 - b. Instances which might affect the validity of warranty or bond.
7. Contractor name, address and telephone number.

1.4 FORM OF SUBMITTALS

- A. Prepare in duplicate packets.
- B. Format:
 1. Size 8-1/2 inches x 11 inches, punch sheets for three-ring binder.
 - a. Fold larger sheets to fit into binders.
 2. Cover: Identify each packet with typed or printed title "WARRANTIES AND BONDS."
List:
 - a. Title of Project
 - b. Name of Contractor
- C. Binders: Commercial quality, three-ring, with durable and cleanable plastic covers.

1.5 TIME OF SUBMITTALS

- A. For equipment or component parts of equipment put into service during progress of construction:
 1. Submit documents within 10 days after inspection and acceptance.
- B. Otherwise make submittals within 10 days after date of substantial completion, prior to final request for payment.
- C. For items of work, where acceptance is delayed materially beyond the Date of Substantial Completion, provide updated submittal within 10 days after acceptance, listing the date of acceptance as the start of the warranty period.

1.6 SUBMITTALS REQUIRED

- A. Submit warranties, bonds, service and maintenance contracts as specified in the respective sections of the Specifications.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 017834

DIVISION 26

ELECTRICAL

SECTION 260001 - BASIC ELECTRICAL MATERIALS AND METHODS

PART 1 - GENERAL

1.1 CONTRACTOR'S UNDERSTANDING

- A. Contractors bidding work under this Contract shall read and understand Division 00 and Division 01 - General Requirements. If any discrepancies are discovered between the Basic Electrical Materials and Methods and General Requirements, the above mentioned documents shall overrule this section. The Basic Electrical Materials and Methods are intended as a supplement to the above mentioned documents.
- B. The Contractor shall bid as outlined in the above mentioned Specifications and shall be governed by any alternates or unit prices called for in the form of proposal.
- C. Each Contractor bidding on the work included in these Specifications shall view the building site and carefully examine the contract Drawings and Specifications, so that he/she may fully understand what is to be done, and to document existing conditions.
- D. The electrical design depicted in the Contract Drawings, is a concept. As the Contractor and Subcontractors layout the job in the field and submit Shop Drawings, it is likely that minor changes will need to be made to the layout, field control wiring, or branch circuits/feeders, from what is shown on the Contract Drawings. These changes will be indicated by Engineer review comments on Shop Drawings or issuance of field orders. It is the Contractors job to coordinate these changes among Subcontractors and equipment vendors, to assure a complete and fully operational electrical system at completion of construction. The Contractor shall not layout the job from the Contract Drawings, but rather from accepted Shop Drawings. Electrical rough-in shall be done based on templates provided from the electrical switchgear and MCC manufacturers showing allowable conduit entry locations.
- E. The Contractor shall perform the work of this contract in a "neat and workmanlike manner" as required by NEC Article 110.12, and further delineated in ANSI/NECA 1, latest edition, "Standard for Good Workmanship in Electrical Construction".

1.2 SCOPE OF WORK

- A. Work included in this section of the Specifications shall include the furnishing of all labor, material, tools, approvals, and other equipment necessary to install the electrical system as shown on the Contract Drawings and as specified herein.
- B. The Contractor shall furnish and install all conduit, wire, disconnect switches and miscellaneous material to make all electrical connections to all items of utilization equipment or wiring devices except as otherwise specified.
- C. Equipment connections shall be made with flexible or rigid conduit as required. Controllers for motors, disconnect switches, and all control, protective and signal devices for motor circuits, except where such apparatus is furnished mounted and connected integrally with the motor driven equipment, shall be installed, connected and left in operating condition. The number and

size of conductors between motors and control or protective apparatus shall be as required to obtain the operation described in these Specifications, and/or by the Contract Documents, and/or as shown in manufacturer furnished, Engineer reviewed Shop Drawings.

- D. All devices and items of electrical equipment, including those shown on the Contract Drawings but not specifically mentioned in the Specifications or those mentioned in the Specifications but not shown on the Contract Drawings, are to be furnished under this section of the specifications. Any such device or item of equipment, if not defined in quality, shall be equal to similar Equipment and/or devices specified herein.
- E. All devices and items of equipment mentioned in this section of the Specifications whether electrical or not or whether furnished under this or other Division of the Specifications, shall be installed under this Division of the Specifications, unless specifically indicated otherwise.
- F. Where wiring diagrams are not shown on the Contract Drawings, they are to be provided by the supplier of the equipment served and such diagrams shall be adhered to except as herein modified.
- G. The following is a list of items that may not be defined clearly on the Contract Drawings or in other parts of these Specifications. The list is meant to be an aid to the Contractor and is not necessarily a complete list of all work to be performed under this Contract:
 - 1. Furnish, install, and connect all electrical conduit, duct and cables.
 - 2. Furnish, install, and connect all power distribution equipment.
 - 3. Abandon and remove all existing wiring and materials not to be reused as shown on the Contract Drawings.
- H. All raceways and wiring shall be fire stopped where required by code and/or indicated in the Contract Drawings, as specified in Section 078400.

1.3 SHOP DRAWINGS, DESCRIPTIVE LITERATURE, INSTALLATION, OPERATION AND MAINTENANCE INFORMATION

- A. Shop Drawings including descriptive literature and/or installation, operation and maintenance instructions shall be submitted for this Division.
- B. Shop Drawings shall be submitted on the following materials specified in this Division:
 - 1. Conduit - all types and sizes, including liquid-tight flexible.
 - 2. Boxes - all types and sizes.
 - 3. Conduit fittings, expansion joints, support hardware.
 - 4. Motor control equipment - including individually mounted items.
 - 5. Power distribution equipment - including individually mounted items.
 - 6. Miscellaneous spare parts and hardware
 - 7. Wire - all types and sizes.
 - 8. Wire markers, signs and labels.
 - 9. Lightning/transient suppressors.
 - 10. Transformers.

- C. The Engineer reserves the right to make modifications to motor control and power distribution equipment ratings after Shop Drawing review, if the Shop Drawings are submitted prematurely (prematurely meaning submitted before all utilization equipment has been reviewed and accepted). Cost of modifications shall be the Contractor's responsibility.

1.4 SYMBOLS AND ABBREVIATIONS

- A. The symbols and abbreviations generally follow standard electrical and architectural practice; however, exceptions to this shall be as shown on the Contract Drawings.

1.5 COORDINATION WITH OTHER TRADES

- A. The Contractor shall coordinate the electrical work with that of other trades to ensure proper final location of all electrical equipment and/or connections. The Contractor shall verify door swings to see that light switches are located properly.

1.6 CODES

- A. The minimum standard for all work shall be the 2018 International Building Code (IBC) with Kentucky Amendments, and the 2017 National Electrical Code (NEC). Whenever and wherever state and/or local laws or ordinances and/or regulations and/or the Engineer's design require a higher standard than the current NEC or KBC, then these laws and/or regulations and/or the design shall be followed.
- B. Following is a list of other applicable Standards and Codes:

1.	International Building Code	IBC
2.	Kentucky Building Code	KBC
3.	National Electrical Code	NEC
4.	National Electrical Safety Code	NESC
5.	Underwriters Laboratories, Inc.	UL
6.	Factory Mutual System	FM
7.	National Fire Protection Association	NFPA
8.	National Electrical Manufacturers Association	NEMA
9.	Occupational Safety and Health Administration	OSHA
10.	Insulated Cable Engineers Association, Inc.	ICEA
11.	Illuminating Engineering Society of North America	IES
12.	Instrument Society of America	ISA
13.	Institute of Electrical and Electronic Engineers, Inc.	IEEE
14.	Certified Ballast Manufacturers Association	CBM
15.	American National Standards Institute, Inc.	ANSI
16.	Anti-Friction Bearing Manufacturers Association, Inc.	AFBMA
17.	Joint Industry Council	JIC
18.	American Society of Heating, Refrigerating and Air Conditioning Engineers, Inc.	ASHRAE
19.	Federal Communications Commission	FCC

20.	American Society for Testing and Materials	ASTM
21.	American Wood Preservers Association	AWPA
22.	Rural Electrification Association	REA

1.7 INSPECTIONS AND PERMITS

- A. Inspection of the electrical system on all construction projects is required. If the local government has appointed a state licensed inspector, the Contractor shall be required to use that person to perform the inspections. If a locally mandated inspector does not exist, the Contractor shall select and hire a state licensed inspector, who has jurisdiction before any work is concealed. The Contractor shall notify the electrical inspector in writing, immediately upon notice to proceed, and a copy of the notice shall be submitted to the Engineer.
- B. At the time of completion of the project, there shall be furnished to the Owner a certificate of compliance, from the agency having jurisdiction pursuant to all electrical work performed. The Engineer shall also receive a copy.
- C. All costs incurred by the Contractor to execute the above mentioned requirements shall be paid by the Contractor at no extra cost to the Owner.
- D. All permits necessary for the complete electrical system shall be obtained by the Contractor from the authorities governing such work. For further information, see Division 01.

1.8 STORAGE

- A. All work, equipment, and materials shall be protected against dirt, water, or other injury during the period of construction.
- B. Sensitive electrical equipment such as motor control centers delivered to the job site, shall be protected against injury or corrosion due to atmospheric conditions or physical damage by other means. Protection is interpreted to mean that equipment shall be stored under roof, in a structure properly heated in cold weather and ventilated in hot weather. Provision shall be made to control the humidity in the storage area to 50 percent relative. The stored equipment shall be inspected periodically, and if it is found that the protection is inadequate, further protective measures shall be employed. Electrical equipment other than boxes and conduit shall not be installed until the structure is under roof with doors and windows installed.

1.9 MATERIALS

- A. All materials used shall be new and at least meet the minimum standards as established by the NEC and/or National Electrical Manufacturers Association (NEMA). All materials shall be UL listed for the application, where a listing exists. Additional requirements are found in Division 01. All equipment shall meet applicable FCC requirements and restrictions.
- B. The material and equipment described herein has been specified according to a particular trade name or make to set quality standards. However, each Contractor has the right to substitute other material and equipment in lieu of that specified, other than those specifically mentioned at

matching or for standardization, providing such material and equipment meets all of the requirements of those specified and is accepted, in writing by the Engineer.

- C. The reuse of salvaged electrical equipment and/or wiring will not be permitted unless specified herein or indicated on the Contract Drawings.
- D. All salvaged or abandoned electrical materials shall become the property of the Contractor and shall be removed from the job site upon completion of the project, unless otherwise noted on the Contract Drawings or specified herein.

1.10 ERRORS, CORRECTIONS, AND/OR OMISSIONS

- A. It is the intent of these Specifications to provide for an electrical system installation complete in every respect, to operate in the manner and under conditions as shown in these Specifications and on the Contract Drawings. The Contractor shall notify the Engineer, in writing, of any omission or error at least 10 days prior to opening of bids. In the event of the Contractor's failure to give such notice, he/she may be required to correct work and/or furnish items omitted without additional cost. Further requirements on this subject may be found in the General Requirements, Division 01.
- B. Necessary changes or revisions in electrical work to meet any code be made by the Contractor without additional charge.

1.11 GUARANTEES AND WARRANTIES

- A. The Contractor shall guarantee all work including equipment, materials, and workmanship. This guarantee shall be against all defects of any of the above and shall run for a period of 1 year from the date of acceptance of the work, concurrent with the one year guarantee period designated for the general construction contract under which electrical work is performed. Date of acceptance shall be considered to be the date on which all "punch list" items are completed ("punch list" is defined to be the written listing of work that is incomplete or deficient that must be finished or replaced/repared before the Contractor receives final payment).
- B. Repair and maintenance for the guarantee period is the responsibility of the Contractor and shall include all repairs and maintenance other than that which is considered as routine. (That is oiling, greasing, etc.) The Engineer shall be the judge of what shall be considered as routine maintenance.

1.12 TESTING

- A. After the wiring system is complete, and at such time as the Engineer may direct, the Contractor shall conduct an operating test for acceptance. The equipment shall be demonstrated to operate in accordance with the requirements of these Specifications and the Contract Drawings. The test shall be performed in the presence of the Engineer or his authorized representative. The Contractor shall furnish all instruments and personnel required for the tests, as well as the necessary electrical power.

- B. Before energizing the system, the Contractor shall check all connections and set all relays and instruments for proper operation. He shall obtain all necessary clearances, approvals, and instructions from the serving utility company and/or equipment manufacturers prior to placing power on the equipment.
- C. Tests may be performed by the Engineer to determine integrity of insulation on wiring circuits selected by the Engineer at random.
- D. Cost of utilities for testing done prior to beneficial occupancy by the Owner shall be borne by the Contractor.

1.13 CLEANUP

- A. Cleanup shall be completed as soon as possible after the electrical installation is complete. All light fixtures, outlets, switches, starters, motor control centers, disconnect switches and other electrical equipment shall be free of shipping tags, stickers, etc. All painted equipment shall be left free of scratches or other blemishes, such as splattered or blistered paint, etc. All light fixture diffusers shall be clean and the interior of all motor controls, etc., shall be free of dust, dirt, wire strippings, etc. Surplus material, rubbish and equipment resulting from the work shall be removed from the job site by the Contractor upon completion of the work.
- B. During construction, cover all Owner equipment and furnishings subject to mechanical damage or contamination in any way.

1.14 CUTTING AND PATCHING

- A. Cutting and patching shall be held to an absolute minimum and such work shall be done only under the direction of the Engineer or Owner. The Contractor shall be responsible for and shall pay for all openings that may be required in the floors or walls, and he shall be responsible for putting said surfaces back in their original condition. Every attempt shall be made to avoid cutting reinforcing steel bars when an opening is required in a reinforced concrete wall or floor slab.

1.15 SLEEVES, CHASES AND OPENINGS

- A. Wiring chases shall be provided where shown on the Contract Drawings. The Contractor shall have the option of installing chases below surface mounted panel boards provided all structural requirements are met.
- B. It is the Contractor's responsibility to leave openings to allow installation of the complete, operational electrical system. Openings required but not left shall be cut as outlined under cutting and patching. The Contractor shall coordinate all holes and other openings with necessary diameters for proper fire stopping.

1.16 POWER COMPANY COORDINATION

- A. The Contractor is responsible for coordinating all activities onsite by the power company.

- B. Any special provisions required by the serving electrical utility shall be as outlined on the Contract Drawings or as advised by the utility at the time of construction, and work required by these special provisions shall be executed with no extra cost to the Owner.

1.17 TEMPORARY ELECTRICAL POWER

- A. The Contractor shall be responsible for providing temporary electrical power as required during the course of construction and shall remove the temporary service equipment when no longer required. Temporary power is also addressed in Division 01.

1.18 OVERCURRENT PROTECTION

- A. Circuit breakers or fused switches shall be the size and type as written herein and shown on the Contract Drawings. Any additional overcurrent protection required to maintain an equipment listing by an authority having jurisdiction shall be installed by the Contractor at no extra cost to the Owner.

1.19 TRAINING

- A. All manufacturers supplying equipment for this division shall provide the Owner's operations staff with training in the operation and maintenance on the equipment being furnished. The training shall be conducted at the project site by a qualified representative of the manufacturer.
- B. The cost of this training shall be included in the bid price.
- C. The required training shall consist of both classroom and hands-on situation. Classroom training shall include instruction on how the equipment works its relationship to all accessories and other related units, detailed review of shop drawings, detailed presentation of written O & M instructions, troubleshooting and record-keeping recommendations. Hands-on-training shall include a review of the manufacturer's O & M instructions, check out of each operator to identifying key elements of the equipment, tear down as appropriate, calibration, adjustment, greasing and oiling points, and operating manipulations of all electrical and mechanical controls.
- D. The training shall be scheduled through the Contractor with the Owner. The timing of the training shall closely coincide with startup of the equipment, but no training shall be conducted until the equipment is operational.
- E. At least 60 days prior to the training the manufacturer shall submit through the Contractor to the Engineer an outline of the training proposed for the Engineer's review and concurrence.
- F. The Owner reserves the right to record all training sessions.

1.20 AS BUILT DRAWINGS

- A. The Contractor shall maintain 1 set of the Contract Drawings on the job in good condition for examination at all times. The Contractor's qualified representative shall enter upon these drawings, from day to day, the actual "as-built" record of construction and/or alteration

progress. Entries and notes shall be made in a neat and legible manner and these drawings delivered to the Engineer after completion of the construction, for use in preparation of Record Drawings.

1.21 MAINTAINING CONTINUOUS ELECTRICAL SYSTEM AND SERVICE

- A. Existing service(s) continuity shall be maintained at all times. In no way shall the installation and/or alteration of the electrical work interfere with or stop the normal operation of the existing facilities, except where prior arrangements have been made.
- B. The existing motor control center shall be replaced in stages to allow existing equipment (pumps, etc.) to be utilized during swap out. Existing main and tie breakers can be configured to allow sections of the existing mcc to be de-energized for replacement.
- C. Contractor shall be responsible for providing temporary transformer, panelboard, breakers, wiring, etc. As required to energize existing branch circuits fed from panelboard PE-LPG. At a minimum power shall be provided for existing PLC control panels (PLC-1, PLC-2, PLC-B, SCC panel), lighting and receptacles.
- D. When additions and taps to existing service(s) require electrical outages of any duration, arrangements shall be made in advance for such outages. If necessary, cuts shall be performed on premium time. If performed at night, requiring a general outage, the Contractor shall furnish an auxiliary source of light and power as required. Under no circumstances shall an electrical outage of any duration be initiated until the Owner and Engineer have concurred, and as far as possible in advance.

1.22 GROUNDING AND BONDING

- A. All metallic conduit, cabinets, equipment, and service shall be grounded in accordance with the latest issue of the National Electrical Code. All supporting framework and other metal or metal clad equipment or materials which are in contact with electrical conduit, cable and/or enclosures shall be properly grounded to meet the code requirements.

1.23 RELATED SPECIFICATION DIVISIONS

- A. The following divisions contain Specifications on utilization equipment, equipment accessories, and procedures related to execution of the electrical work, and are included here for the Contractor's information. Bids shall still be based on complete Contract Documents.

Division 00 – Procurement and Contracting Requirements

Division 01 – General Requirements

Division 02 – Existing Conditions

Division 46 – Water and Wastewater Equipment

1.24 CONTRACTOR LICENSING

- A. The Contractor performing the electrical work on this project shall be locally licensed, if required by local law or ordinance. If the Contractor has passed the State test, it may not be necessary to meet local testing requirements. It shall be the Contractor's responsibility to investigate these requirements and comply with same.

1.25 ANCHORING/MOUNTING

- A. Electrical conduits and/or equipment shall be rigidly supported. Anchors used shall be metallic expansion type, or if appropriate to prevent spalling concrete, epoxy set type. Plastic or explosive type anchors are prohibited.
- B. Seismic Anchorage & Qualification of Electrical Components
 - 1. Refer to the structural drawings for seismic design criteria, including seismic design accelerations, Seismic Design Category and structure Risk Category.
 - 2. All electrical components shall be anchored to resist seismic forces in buildings with seismic design category D, E, or F except when ALL of the conditions exist:
 - a. The component is not required for life safety.
 - b. The component is not needed for continuing operation of a Risk Category IV structure.
 - c. The component is positively attached to the structure.
 - d. The component is flexibly connected to associated conduit and is one of the following:
 - 1) The component weighs less than 400 lb and has a center of mass less than 48 in above the adjacent floor level OR
 - 2) The component weighs less than 20 lb or less than 5 lb/s.f. if distributed.
 - 3. All electrical components required for life safety shall be anchored to resist seismic forces in buildings with Seismic Design Category C, D, E or F.
 - 4. All electrical components required for continued operation of a Risk Category IV structure shall be anchored to resist seismic forces in buildings regardless of the Seismic Design Category.
 - 5. Where anchorage to resist seismic forces is required, the following shall be submitted:
 - a. Designs of all connections of electrical components to the structure, either supplied and certified by the manufacturer; or by a licensed professional engineer qualified and experienced in such design – FOR APPROVAL prior to installation.
 - b. Certifications by manufacturers of electrical equipment in accordance with 13.2.2.1 of ASCE 7 – FOR APPROVAL prior to purchase.
 - c. Special Inspection Reports verifying that the electrical components were installed in accordance with the seismic anchorage designs – FOR RECORD after installation.

1.26 RECEIPTS

- A. Some sections of the Specifications call for equipment, materials, accessories, etc. to be provided and “turned over to the Owner” or like requirements. The Contractor shall obtain a receipt for each item turned over, signed by the Owner or his representative. A copy of this receipt shall be transmitted to the Engineer.
- B. When a question arises concerning whether items have been turned over to the Owner, and there is no signed receipt, it may be assumed that the items were not provided.

1.27 BUY AMERICAN

- A. The Contractor is responsible for compliance with any “Buy American” legislation that may apply to this project due to State, Federal, and local laws or funding agency requirements. Necessary certifications of the sourcing of materials shall be part of the submittals.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 260001

SECTION 260100 - ELECTRICAL DEMOLITION

PART 1 – GENERAL

1.1 SCOPE OF WORK

- A. Furnish all labor, equipment, materials, and supplies necessary for and reasonably incidental to demolition of work hereinafter specified, indicated on drawings, required or intended for completion of the work.
- B. Major items included under demolition work include, but are not limited to:
 - 1. Existing motor control center MCC-F at the Primary Effluent Pump Station.
- C. Repair those areas damaged under demolition work once new services and systems have been installed.

1.2 SUBMITTALS

- A. No submittals are anticipated under this Section.

1.3 JOB CONDITIONS

- A. Provide adequate protection to persons and property. Execute work in such a manner as to avoid interference with required operations and use of or passage to and from adjoining buildings and facilities.
- B. Demolition work of equipment necessary for the operation of the power and control systems to be coordinated with the installation of new equipment. The demolition and installation work is to be done as quickly as possible to minimize any burdens on the Owner.

1.4 CONDITION OF EXISTING FACILITIES

- A. Contractor shall verify the areas, conditions and features necessary to tie new work into existing construction. This verification shall be done prior to submittal of shop drawings, fabrication or erection, construction or installation. The Contractor shall be responsible for the accurate tie-in of the new work to existing facilities.

PART 2 – PRODUCTS (Not Applicable)

PART 3 – EXECUTION

3.1 SCHEDULES

- A. Schedule all demolition work as to cause minimal interference with existing facility operations. Refer to Specification Divisions 0 and Division 01 for additional requirements.
- B. Obtain prior approval of the Owner at least seven days in advance before starting demolition of any equipment. Under no circumstances will demolition work be approved until new equipment is ready for installation.

3.2 PREPARATION

- A. Disconnect or arrange for disconnection of utility service connections to equipment and areas to be demolished before starting demolition.
- B. Preserve in operating condition all active utilities transversing the project site. Protect all equipment that remains (electrical and mechanical) during demolition, and repair all damage caused by this work to satisfaction of Engineer.

3.3 APPLICATION

- A. All existing walls, ceilings, floor slabs, etc., being cut or damaged under this Contract shall be patched back to match existing by General Contractor.
- B. All existing switchgear and control equipment being removed shall be disposed of by the Contractor. Refer to 260000 for more details.
- C. Remove exposed ground conductor back to source or point of contact with slab. Cut conductor off below slab and abandon with hole being patched back to match existing surface (floor, wall or ceiling). If reusable, simply disconnect ground conductor.
- D. Conduits, wire and wood products that are not salvageable shall be disposed of legally.
- E. Primary work shall be completed with all facilities kept in service or with short periods of scheduled momentary outages.
- F. Holes in slabs or into classified areas to be patched to provide a gas, vapor and watertight barrier.

3.4 STORAGE AND HANDLING

- A. The Owner reserves the right to save materials that are a part of the demolition work, and the Contractor shall turn over and store any such materials at the Owner's direction.

- B. All materials not turned over to Owner shall become property of Contractor and removed promptly from project site at no additional cost to the Owner. Any permits or fees for disposal shall be the responsibility of the Contractor.

3.5 CLEANUP

- A. Burn no materials or debris on premises.
- B. Remove from site rubbish and debris found thereon and, except as otherwise specified, materials and debris resulting from work of demolition. Leave site in safe and clean condition.

END OF SECTION 260100

SECTION 260519 - CONDUCTORS AND CABLES

PART 1 - GENERAL

1.1 SCOPE OF WORK

- A. All wire and cable shall conform to the latest requirements of the NEC and shall meet all ASTM/UL specifications. Wire and cable shall be new; shall have size, grade of insulation, voltage rating and manufacturer's name permanently marked on the outer covering at regular intervals. Complete descriptive literature shall be submitted to the Engineer for review and acceptance prior to installation.
- B. Building wire #12 - #1 shall be applied based on a 60° C temperature rise. Building wire larger than #1 may be applied at its 75° C temperature rise.

1.2 DELIVERY, STORAGE AND HANDLING

- A. Wire and cable shall be suitably protected from weather and damage during storage and handling and shall be in first class condition when installed.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

- A. Building Wire (types THWN and THW-cu.) – American, Carol, or Collyer, Rome, equal.
- B. Flexible Cords and Cables (Types “SO” (600V) “SJO” - 300V) Collyer, American, Carol, or equal.

2.2 MATERIALS

- A. General
 - 1. In general, all conductors shall be 98 percent conductive, annealed copper unless otherwise noted on the Contract Drawings.
 - 2. Conductors shall be type THW or THWN insulation. Conductor size shall be AWG (American Wire Gauge) Standard. Minimum conductor size shall be AWG number 12 except branch circuits in excess of 75 feet from panel to first outlet not smaller than no. 10 AWG. Minimum voltage rating shall be 600 volts. Conductors for small power may be solid (i.e. lighting, receptacles), but conductors for control work shall be stranded.
 - 3. Conductors with high temperature rated insulations and special construction shall be used where required in connecting to light fixtures or appliances that have special requirements.

PART 3 - EXECUTION

3.1 INSTALLATION/APPLICATION/ERECTION

A. General

1. Conductors shall be continuous from outlet to outlet and no splices shall be made except accessible in junction or outlet boxes. Wire connectors of insulating material or solderless pressure connectors, properly taped, shall be used for all splices in wiring, wherever possible.
2. Conductors shall be color coded in accordance with the following schedule:

	480/277V 3 Phase	208/120V 3 Phase	120/240, Single Phase
Phase A	Brown	Black	Black
Phase B	Orange	Red	Red
Phase C	Yellow	Blue	
Neutral (Grounded)	White or Light Gray	White or Light Gray	White or Light Gray
3-Way Tracers			Blue
Grounding	Green	Green	Green
Remote Energized Conductors (Control)			Orange
Control	Per NFPA 79	Per NFPA 79	

3. Conductors shall be pulled into raceways in strict accordance with manufacturer's recommendations.
4. Ample slack conductors shall be allowed at each terminal point, and pull or junction box, to permit installation with ease and without crowding.
5. All conductors terminating at terminal blocks shall be identified with numbers and/or letters identical to circuit or control identification.
6. No conductors shall be drawn into conduits until all work which may cause wire or cable damage is completed. Wire pulling shall be accomplished utilizing machinery and accessories intended for the purpose.
7. All connections and splices shall be made in accordance with conductor manufacturer's recommendations, and as written herein.
8. If the size and number of conductors in a conduit on the Drawings is not shown, then it shall be assumed to be 3 #12, 3/4 inch C.
9. In general, feeder sizes shown are based on no more than three current carrying conductors in a conduit. Multiple small branch circuit feeders may be combined in a common conduit, provided conductors are derated in accordance with NEC article 310-15.
10. Unless otherwise specifically indicated, neutrals may not be shared.

B. Low Voltage Feeders

1. All feeders are of the secondary type, below 600-volt, unless otherwise noted. Secondary feeder voltage shall be 480-volt, 240-volt, or 208-volt as noted in the Contract Drawings.

Three-phase, 4-wire for power and 208/120-volt, 3-phase, 4-wire for general lighting, unless otherwise noted. The Contractor shall furnish and install all feeders from the distribution center(s) to each of the other structures/subpanels as shown on the Contract Drawings.

2. Wire shall be factory color coded for each phase and neutral, with green used for the ground conductor. As far as practical, all feeders shall be continuous from origin to panel termination without running splices in intermediate pull boxes.
3. A grounding conductor shall be installed, sized per code, within every conduit containing voltages above 24VAC. Although the metallic conduit system shall be bonded, the metallic conduit systems shall not be the sole source of bonding.

END OF SECTION 260519

SECTION 260526 - SECONDARY GROUNDING

PART 1 - GENERAL

1.1 SCOPE OF WORK

- A. Grounding shall be done in accordance with the NEC, as described in these Specifications, and as shown on the Contract Documents.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

- A. Grounding equipment shall be Cadweld, ITT Blackburn, ITT Weaver, Copperweld Bimetallics Group, Cathodic Engineering Equipment Co., or equal.

PART 3 - EXECUTION

3.1 INSTALLATION/APPLICATION/ERECTION

- A. Grounding shall utilize a counterpoise and driven ground rod system to achieve the design ground resistance.
- B. The ground system shall be continuous with all structures on a common ground. This can be accomplished by bonding all conduits together and bonding to the ground bus at each equipment enclosure. Bonding jumpers shall be required at all pull boxes, and at all motor casings. A separate grounding conductor shall be pulled in all conduits in addition to wire counts shown on Drawings.
- C. Ground rods shall be 3/4-inch x 10 foot copper clad type. Where multiple rods are driven, they shall be separated by at least 10 feet to assure maximum effect.
- D. Ground resistance between ground and absolute earth shall not exceed 5 ohms.
- E. All grounding and grounding electrode systems shall be as required by the NEC as for types of electrodes utilized and sizing of grounding conductor to service equipment from the electrode system. These shall include footer rebar, buried metal water pipe, buried bare copper conductor, etc.
- F. All concealed grounding electrode system connections shall be made using exothermic welds, Cadweld, or equal. No splices are allowed in the grounding electrode conductor.
- G. Should ground rods be impractical for use due to rocky conditions, then grounding electrode plates may be used after acceptance by the Engineer on a case by case basis.

3.2 FIELD QUALITY CONTROL

A. Testing

1. The Contractor shall be required to provide all labor, tools, instruments, and materials as necessary to perform testing of the grounding electrode system. Results shall be submitted in writing to the Engineer. The testing shall be done to determine the effectiveness of the selected grounding scheme and to see that it conforms to resistance specified (5 ohms maximum).
2. The testing should be done using a fall-of-potential method test at the point of grounding electrode conductor connection to main power distribution equipment and at each separately derived system or MCC. The test shall be performed no sooner than 48 hours after a rainfall event.
3. The written report should contain the following information:
 - a. Type of ground scheme used, i.e., building steel, driven rod, mat, etc.
 - b. Type of instrument used.
 - 1) Manufacturer
 - 2) Model Number
 - 3) Confirm fall-of-potential test
 - 4)* Serial Number
 - 5)* Where instrument was obtained
 - * These 2 items are required so that the same instrument may be utilized should reproduction of the test be necessary due to unsatisfactory readings/instrument miscalibration.
 - c. Ground resistance readings obtained at various test distances.
 - d. Ground resistance/distance curve.
 - e. Value of Grounding Electrode Resistance at knee of curve.
 - f. Sketch showing setup of instrumentation and location of grounding electrode and test probes.
 - g. Proposed method to achieve the specified resistance, should an unacceptable reading be obtained.
 - h. Ground resistance readings obtained (if applicable) after modifications incorporated.

3.3 GROUND ENHANCEMENT MATERIAL

- A. Where indicated on the Drawings or as deemed necessary by the Contractor to achieve design grounding electrode system resistance, a ground enhancement material shall be utilized, in accordance with manufacturer's recommendations.
- B. The ground enhancement material must be permanent and maintenance free (no recharging with salts or chemicals which may be corrosive) and maintain its earth resistance for the life of the system. It must set up firmly and not dissolve or decompose, or otherwise pollute the soil or local water table. The material shall be capable of being applied dry or in a slurry form, and shall reduce resistance by at least 40 percent.
- C. Basic components of this material shall be carbon, hydraulic cements, and hydrous aluminum

silicates. Minimum 4-inch diameter holes shall be used with ground rod installations, with depth 6 inch shorter than length of rod, completely filled with the material. Trenches for grounding electrode conductor shall also utilize this material the full length from electrode to building, in accordance with manufacturer installation recommendations, except trench depth shall allow buried conductor to be at least 2'-6 inch deep.

- D. Ground enhancement material shall be GEM by Erico Products, Powerfill by Cathodic Engineering Equipment Company, or equal.

END OF SECTION 260526

SECTION 260529 – SUPPORTING DEVICES AND HANGERS

PART 1 – GENERAL

1.1 SCOPE OF WORK

- A. Provide a system of supporting devices and hangers to ensure secure support or bracing for conduit, electrical equipment, including safety switches, fixtures, panelboards, outlet boxes, junction boxes, cabinets, etc.
- B. All electrical equipment shall be rigidly mounted, and installed using supporting devices as indicated, required by the work, or as described herein.

PART 2 – PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

- A. Provide appropriate supporting devices and hangers as manufactured by Erico Products, Inc., Steel City, Rayco, or equal:
 - 1. Vertical flange clamps (beam clamps).
 - 2. “Z” purlin clips.
 - 3. Conduit clips.
 - 4. Universal clamps (Beam clamps).
 - 5. Beam clamps (set screw type).
 - 6. Combination push-in conduit clips.
 - 7. Combination conduit hanger clamps.
 - 8. Flexible conduit clips.
 - 9. Special combination conduit clips.
 - 10. One hole steel straps.
 - 11. Minerallac conduit hangers.
- B. Strut type channel shall be Unistrut, Kindorf, or equal.

2.2 MATERIALS

- A. All mounting brackets and strut used outside shall be aluminum. Fasteners used to mount equipment outside shall be stainless steel. The only exception to the above shall be anchor bolts for area lightpoles which shall be allowed to have galvanized threads and galvanized nuts.
- B. All mounting brackets and strut used inside shall be galvanized or aluminum. If galvanized is used, then the cut ends shall be cold galvanized. Fasteners used inside to mount equipment into concrete shall also be stainless steel. Ungalvanized strut is prohibited.

PART 3 – EXECUTION

3.1 INSTALLATION

- A. Secure conduits to within 3' of each outlet box, junction box, cabinet, fitting, etc., and at intervals not to exceed ten feet (10') for EMT conduit and in accordance with Table 344.30 (B) (2) for Rigid Steel conduit.
- B. Install clamps secured to structure for feeder and other conduits routed against the structure. Use drop rods and hangers or racks to support conduits run apart from the structure.
- C. Furnish and install suitable angle iron, channel iron or steel metal framing with accessories to support or brace electrical equipment including safety switches, fixtures, panelboards, outlet boxes, etc.
- D. Fasteners used to mount equipment into concrete shall be stainless steel.
- E. All freestanding equipment shall be anchored to its foundation using stainless steel expansion bolts of the type, size, and number recommended by the equipment manufacturer.
- F. Paint all supporting metal not otherwise protected, with rust inhibiting primer and then with a finish coat if appropriate to match the surrounding metal surfaces. (Prepainted or galvanized support material is not required to be painted or repainted.)
- H. Use of chains, perforated iron, bailing wire, or tie wire for supporting conduit runs will not be permitted.

END OF SECTION 260529

SECTION 260533 - RACEWAYS

PART 1 - GENERAL

1.1 SCOPE OF WORK

- A. This section of the Technical Specifications includes all raceways for accommodation of electrical conductors, communications conductors, sleeves for underground electrical installations, conduit stubs for future installations, fittings therefore and accessories.
- B. All raceways shall be marked with the manufacturer's name or trademark as well as type of raceway and size. This marking shall appear at least once every 10 feet and shall be of sufficient durability to withstand the environment involved. All raceways shall be furnished and installed as outlined under Part 3 of this Specification.
- C. All raceways and fittings shall be painted to match existing or surrounding surfaces except in mechanical spaces.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

- A. Tubular Raceways
 - 1. Steel, Galvanized, Rigid, Heavy-Wall, Threaded – Wheatland Tube Co., Triangle, Allied Tube & Conduit Corp., or equal.
 - 2. Aluminum, Rigid, Heavy-Wall, Threaded – VAW, Alcoa, Reynolds, or equal.
- B. Wireways
 - 1. Square-D, Hoffman, or equal.
- C. Raceway Fittings
 - 1. Conduit fittings – Crouse-Hinds, Appleton, OZ Gedney, or equal.

2.2 MATERIALS

- A. Aluminum Conduit
 - 1. Aluminum conduit shall be extruded from alloy 6063 and shall be the rigid type, non-toxic, corrosion resistant, and non-staining. It shall be manufactured per UL standards as well as listed/labeled by same.
 - 2. Fittings, boxes, and accessories used in conjunction with aluminum conduit shall be die cast, copper free type. They shall be resistant to both chemical and galvanic corrosion. All covers shall have neoprene gaskets.

3. Aluminum conduit proposed for concrete slab or underground applications shall be UL listed for the purpose and factory pre-coated.
- B. Rigid Steel Conduit
1. Rigid steel conduit and fittings shall be of mild steel piping, galvanized inside and out, and shall conform to UL standards. The conduit and fittings shall be listed and labeled by UL as well. The galvanized coating of zinc shall be of uniform thickness applied by the hot-dipped process, and shall be applied also to the threads. It shall be further dipped in a chromic acid bath so as to chemically form a corrosion resistant protective coating of zinc chromate which has a characteristic yellow-green color. Each piece of conduit shall be straight, free from blisters and other defects, cut square and taper reamed. It shall be delivered with plastic protectors on the threads.
- E. Conduit Fittings
1. Rigid Steel Conduit Fittings
 - a. Standard threaded couplings, locknuts, bushings, and elbows made only of steel or malleable iron are acceptable.
 - b. Locknuts: Bonding type with sharp edges for digging into the metal wall of an enclosure.
 - c. Bushings: Metallic insulating type, consisting of an insulating insert molded or locked into the metallic body of the fitting. Bushings made entirely of metal or nonmetallic material are not permitted.
 - d. Erickson (union-type) and set screw type couplings: Approved for use in concrete are permitted or use to complete a conduit run where conduit is installed in concrete. Use set screws of case hardened steel with hex head and cup point to firmly seat in conduit wall for positive ground. Tightening of set screws with pliers is prohibited.
 - e. Sealing fittings: Threaded cast iron type. Use continuous drain type sealing fittings to prevent passage of water vapor. In concealed work, installed fittings in flush steel boxes with blank coverplates having the same finishes as that of other electrical plates in the room.
 2. Rigid Aluminum Conduit Fittings
 - a. Standard threaded couplings, locknuts, bushings, and elbows: Malleable iron, steel or aluminum alloy materials. Zinc or cadmium plate iron or steel fittings. Aluminum fittings containing more than 0.4 percent copper are prohibited.
 - b. Locknuts and bushings: As specified for rigid steel conduit.
 - c. Set screw fittings: Not permitted for use with aluminum conduit.
 3. Expansion and Deflection Couplings
 - a. Accommodate 1.9 cm (0.75 inch) deflection, expansion, or contraction in any direction, and allow 30 degree angular deflections.
 - b. Include internal flexible metal braid sized to guarantee conduit ground continuity and fault currents in accordance with UL, and the NEC code tables for ground conductors.

- c. Watertight, seismically qualified, corrosion-resistant, threaded for and compatible with rigid or intermediate metal conduit.
- d. Jacket: Flexible, corrosion-resistant, watertight, moisture and heat resistant molded rubber material and stainless steel jacket clamps.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Exterior underground metallic conduits shall be degreased, pretreated, and coated with 2 coats of Carboline 888 epoxy, or equal. Other finishes may be acceptable upon the Engineer's review.

3.2 INSTALLATION

A. Conduit

1. All conduit shall be installed in a first class workmanship manner. It shall be installed in horizontal and vertical runs in such a manner as to ensure against trouble from the collection of trapped condensation and shall be arranged so as to be devoid of traps wherever possible. Special care shall be used in assuring that exposed conduit runs are parallel or perpendicular to walls, structural members, or intersections of vertical planes and ceilings. No open wiring is allowed.
2. Fittings or symmetrical bends shall be required wherever right angle turns are made in exposed work. Bends and offsets shall be avoided wherever possible, but where necessary, they shall be made with an approved conduit bending machine. All conduit joints shall be cut square, reamed smooth and drawn up tight, using couplings intended for the purpose.
3. Conduits shall be securely fastened to all sheet metal outlets, junction and pull boxes with double galvanized locknuts and insulating-grounding bushings as required by the NEC. Conduit crossings in insulating roof fill will require both conduits to be secured to the roof deck, and these crossings can only be made where the insulating fill is a minimum of 3 inches deep. Runs of exposed conduit shall be supported in accordance with the NEC using cast aluminum or malleable iron one hole pipe straps with spacers to provide an air space behind the conduit. Stainless steel minerallac, one piece conduit clamps shall be acceptable where located such that building occupants are not in danger of inadvertent contact, since this type fitting has several sharp edges. In general terms, they may be considered in areas such as on or above ceilings, or high on walls. All conduit in walls and slabs shall be securely braced, capped (wooden plugs are prohibited), and fastened to the forms to prevent dislodgement during vibration and pouring of concrete.
4. During construction, all conduit work shall be protected to prevent lodgement of dirt, plaster or trash in conduits, fittings or boxes. Conduits which have been plugged shall be entirely freed of accumulations or be replaced. All conduits in floors or below grade shall be swabbed free of debris and moisture before wires are pulled. Crushed or deformed conduit shall not be permitted.
5. Where GRS conduit penetrates a floor slab the conduit shall be painted with 2 coats of Koppers Bitumastic 300-M or equal to a point 6 inches above the penetration.

6. In certain situations, conduit expansion joints shall be required to ensure against conduit and/or cable damage due to settling or thermal expansion and contraction. These expansion joints shall be required where required by the manufacturer or the Contract Drawings and shall be installed per manufacturer's instructions.
7. All conduit to be added to an existing structure shall be exposed in unfinished and process areas.
8. Aluminum conduit shall not be used underground or placed in concrete slabs, unless it is UL listed for the purpose and factory pre-coated.
9. All metal raceway systems shall be grounding conductive solidly bonded throughout and grounded in accordance with NEC requirements and/or as noted on the Contract Drawings. In addition, all raceway systems shall be provided with separate grounding conductors.
10. Minimum conduit size shall be 3/4 inch. The following table shows the minimum burial depth required for all exterior conduit or cable:

Rigid Metal Conduit

18"

11. Wire pulling shall be facilitated by the use of a UL approved pulling compound in pulls over 30 feet in length or where there are 2 or more 90 degree bends. Only polypropylene, nylon, or manila pulling ropes will be permitted. Standard industry recognized wire pulling equipment shall be used.
12. Areas of use for each type of conduit:

Buildings – Interior	Schedule 80 PVC	EMT	GRS	PVC Coated RGS	Aluminum
Process Buildings (Exposed Only)			X		X
<u>Exterior Underground</u>					
Low Voltage			X		X**
<u>Exterior Exposed</u>					
Low Voltage			X		X

**Aluminum conduit for this application must be factory pre-coated and UL listed for the application.

13. All conduit shall have an insulated ground wire pulled to all equipment and receptacles.
14. All raceway runs are shown diagrammatically to outline the general routing of the raceway. The installation shall be made to avoid interference with pipes, ducts, structural members or other equipment. Should structural or other interference prevent the installation of the raceways, or setting of boxes, cabinets, or the electrical equipment, as indicated in the Drawings, deviations must be approved by the Owner and after approval, shall be made without additional charges and shown on the Record Drawings.
15. Fire Stop: Where conduits, wireways, and other electrical raceways pass through fire partitions, fire walls, smoke partitions, or floors, install a fire stop that provides an effective barrier against the spread of fire, smoke and gases, with rock wool fiber or silicone foam sealant only. Completely fill and seal clearances between raceways and

openings with the fire stop material. See Section 078400 for complete fire stop requirements.

16. Assure conduit installation does not encroach into the ceiling height head room, walkways, or doorways.

END OF SECTION 260533

SECTION 260534 - BOXES

PART 1 - GENERAL

1.1 SCOPE OF WORK

- A. Outlet and junction boxes shall be furnished and installed where indicated on the Contract Drawings, and/or as required by the work in accordance with the NEC.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

- A. Boxes – Queen, Wiegmann, Appleton, Raco, Bauers, Crouse-Hinds, Hoffman, Robroy Industries, Cloud Concrete Products, Spring City, Carlon, Sedco, or equal.

2.2 GENERAL

- A. All junction and/or pull boxes for dry (non-corrosive) areas shall be of code gauge sheet metal construction, of the inside dimensions as required by code, with covers.
- B. Junction and/or pull boxes for wet or damp locations shall be cast metal, rust and corrosion resistant (NEMA 4X), with at least 5-1/2 full threads for each (bossed) conduit opening, and shall be suitable for flush or surface mounting as required with drilled external, cast mounting extensions (bossed to provide at least 1/8 inch between back of box and mounting surface for drainage). Box covers shall be hinged or cap screw retained as required, of the same material as the box and provided with stainless steel (rustproof) hardware.
- C. Junction boxes for out-of-doors use, not mounted in concrete may be sheet metal (NEMA 4X), waterproof, rustproof, rain and sleetproof, with hinged covers and latches and provided means of locking by means of keyed locks, tamper-resistant screws or padlocking as required and with clamping cap-screws top and bottom door edges to provide firm contact with gasketing. All gaskets shall be molded (unbroken) neoprene or butyl rubber.
- D. NEMA 4X junction and/or pull boxes may be stainless steel, if called for on the Contract Drawings; or non-metallic or cast aluminum.

PART 3 - EXECUTION

3.1 INSTALLATION, APPLICATION, AND ERECTION

- A. General

1. Outlets shall be installed in the locations shown on the Contract Drawings. The Contractor shall study the general building plans in relation to the space surrounding each outlet, in order that his work may fit the other work required by these Specifications. When necessary, the Contractor shall relocate outlets so that when fixtures or other fittings are installed, they will be symmetrically located according to room layout and will not interfere with other work or equipment.
2. All supports for outlet boxes shall be furnished and installed by the electrical trades.

B. Exposed Work

1. Outlet or junction boxes for use with exposed steel conduit shall be cast steel. In dry areas sheet steel with rounded corners, made for the purpose.
2. Outlet or junction boxes for use with exposed aluminum conduit shall be copper free, cast aluminum type.

D. Pull Boxes

1. Interior pull boxes are not shown but shall be used as needed. Pull box types are as follows:
 - Exterior - Per detail on the Contract Drawings.
 - Interior - Interior pull boxes in dry areas shall be of code gauge steel of not less than the minimum required by the NEC and shall be provided with hinged covers. In wet areas or pipe galleries, they shall be rated watertight, of stainless steel, cast aluminum, PVC, fiberglass, or equal. Hardware shall be stainless steel.

E. Openings in Electrical Boxes

1. All openings in electrical equipment, enclosures, cabinets, outlet and junction boxes shall be by means of welded bosses, standard knockouts, or shall be sawed, drilled, or punched with tools specially made for the purpose. The use of a cutting torch is prohibited. Unused openings shall be plugged per the NEC.

END OF SECTION 260534

SECTION 260553 - ELECTRICAL IDENTIFICATION

PART 1 - GENERAL

1.1 EQUIPMENT LABELING

- A. All starters, feeder units in motor control centers, etc., shall be marked to indicate the motor, outlet, circuit they control, or variable monitored. Marking is to be done with engraved laminated nameplates and shall bear the designation shown on the Contract Drawings where this information is given. Nameplates shall be fastened to equipment with stainless steel screws, minimum of one each side. In no way shall the installation of mounting screws void the NEMA enclosure rating of the equipment in which they are installed. If there are more than one identical unit, they shall be given consecutive numbers or other descriptions as designated by the Engineer. Nameplate background color shall be white, with black engraved letters, unless otherwise noted.
- B. Branch circuits in lighting panels shall be typed on a card suitable for the card frame furnished with the panel. The card shall bear the panel designation listed on the Contract Drawings where this information is given, as well as indicate what each circuit controls.
- C. Electrical equipment such as switchboards, panelboards, control panels, motor control centers, individually mounted starters, etc. shall be labeled with vinyl self-adhesive signs that warn of "High Voltage" (state the specific voltage) and potential arc flash and shock hazards. Main service entrance conduits to a building, where exposed, shall be labeled with the voltage of the service they carry. Other major equipment such as transformers, transfer switches, generator sets, pump control panels, etc., shall be labeled as such. The type of labels to be used shall have orange as the basic color to conform with OSHA requirements, letters shall be black. The labels shall be of proper size to fit flatly on the surface of the enclosure to make for a neat appearance and not interfere with the operating function of the device it is attached to. These labels shall be as manufactured by the Brady Identification Systems Division, Safety Sign Company, Westline Products Company, or equal.
- D. The motor control center manufacturer shall furnish and install a maximum available fault current sign with date calculated on each motor control center main circuit breaker cubicle.
- E. Furnish and install "Authorized Personnel Only" signs by doors into all power distribution equipment rooms/buildings. Furnish and install other signs as indicated on the Contract Drawings.

PART 2 - PRODUCTS (Not applicable)

PART 3 – EXECUTION (Not applicable)

END OF SECTION 260553

SECTION 262213 - SMALL POWER AND MISCELLANEOUS TRANSFORMERS

PART 1 - GENERAL

1.1 SCOPE OF WORK

- A. Transformer locations and size shall be as shown on the Contract Drawings, as specified herein.
- B. Provide NEMA 4X stainless steel enclosed transformers where indicated on the Contract Drawings.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

- A. Square D, Eaton or equal.

2.2 FABRICATION

A. General Purpose Dry-Type Transformers

1. Three-phase transformers shall be 480 or 600-volts delta primary and 208Y/120 or 240-volt delta secondary, as indicated on the Contract Drawings. Transformers 25 KVA and larger shall have a minimum of 4 (2 above, 2 below) 2 percent full capacity primary taps.
2. Transformers shall be 150 degrees Celsius temperature rise above a 40 degrees Celsius ambient. All insulating materials are to be in accordance with the latest NEMA Standards for a 220 degrees Celsius UL recognized insulation system.
3. Transformer coils shall be of the continuous wire wound construction and shall be impregnated with non-hygroscopic, thermo-setting varnish. The coils shall also have a final wrap of electrical insulating material to prevent mechanical injury to the wire as well as increasing the electrical breakdown strength.
4. All cores shall be constructed of high grade, non-aging silicon steel with high magnetic permeability, and low hysteresis and eddy current losses. Magnetic flux densities are to be kept well below the saturation point. The core laminations shall be clamped together with steel angles. The completed core and coil shall then be bolted to the base of the enclosure but isolated from the base by means of rubber, vibration absorbing mounts. There shall be no metal-to-metal contact between the core and coil to the enclosure. On transformers 500 KVA and smaller, the vibration isolation system shall be designed to provide a permanent fastening of the core and coil to the enclosure. To further facilitate vibration and noise isolation, the final section of conduit to the transformer shall be flexible.
5. Transformers 25 KVA and larger shall be in heavy gauge, sheet steel, ventilated enclosures. The ventilating openings shall be designed to prevent accidental access to live parts in accordance with UL, NEMA, and National Electrical Code Standards for ventilated enclosures. Transformers 25 KVA through 75 KVA shall be designed so they can either be floor or wall mounted. Above 75 KVA they shall be of the floor mounted design.
6. The entire transformer enclosure shall be degreased, cleaned, phosphatized, primed, and

finished in the same color as the motor control equipment. For more details see Division 9 of these Specifications.

7. The maximum temperature of the top of the enclosure shall not exceed 50 degrees Celsius rise above a 40 degrees Celsius ambient.
8. The core of the transformer shall be visibly grounded to the enclosure by means of a flexible grounding conductor sized in accordance with NEMA and NEC Standards.
9. The transformer shall be marked "DANGER HIGH VOLTAGE" with labels specified in the section on marking, this Division.
10. The transformers shall be manufactured to requirements of applicable standards, especially as they apply to noise level and surface temperatures.

PART 3 - EXECUTION

3.1 INSTALLATION / APPLICATION / ERECTION

- A. Transformers shall be rigidly mounted to the structure or the foundation in the case of freestanding units.
- B. Transformers shall be megger tested prior to energization.
- C. Transformers with taps shall be adjusted to supply the nominal service voltage required on the secondary.
- D. Transformers shall be installed in accordance with NEC requirements and manufacturer recommendations.

END OF SECTION 262213

SECTION 262419 - MOTOR CONTROL CENTERS

PART 1 - GENERAL

1.1 SCOPE OF WORK

- A. Contractor shall furnish and install Motor Control Centers as specified herein and as shown on the Drawings.

1.2 SUBMITTALS

- A. Motor Control Centers shall be new and the equipment of one manufacturer. Each component is specified by a particular trade name; however, this does not relieve the Contractor of the responsibility of submitting descriptive literature and Shop Drawings for review of all components. Motor control shall be the same brand as power distribution equipment on projects with both.
- B. Shop drawings, including layout drawings, complete schematic and composite wiring diagrams, control circuit wiring diagrams and descriptive literature shall be submitted to the Engineer for review. Service manuals shall be submitted on all equipment and shall be bound in 3-ring loose-leaf binders. The manuals shall also include information on accessories such as timers, etc., built in the controls.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

- A. Control Equipment
 - 1. Allen Bradley, Schneider, Eaton, or equal.
- B. Timers
 - 1. Intermatic, Paragon, Tork, or equal.

2.2 MOTOR CONTROL CENTERS (MCC)

- A. General
 - 1. Quality of built-in transformers, starters, lighting panelboards, timers, etc. shall be as written elsewhere in this Division unless otherwise noted.
 - 2. Motor Control Center(s) shall consist of one or more enclosed vertical sections joined together to form a rigid, free standing assembly. The construction of the Motor Control Center shall meet the requirements set forth by Underwriters' Laboratories publication UL-845, NEMA publication number ICS-2-322, the National Electrical Code, and color coded.

3. The structure shall be UL listed and labeled as service equipment if applicable. All sections shall bear UL labels.
4. Enclosures shall be NEMA 1 unless otherwise indicated, and each control center suitable for connection to an available fault current of 65,000 RMS symmetrical amperes.

B. Construction

1. Vertical Sections

- a. Vertical sections shall support the horizontal and vertical buses, combination starter units, covers and doors, and shall be designed to allow for easy rearrangement of units by the purchaser. Vertical sections shall have structural supporting members formed of a minimum of 13 gauge hot-rolled steel. All finished surfaces shall be blemish-free. Where needed, reinforcement structural parts shall be of 10-gauge steel to provide a strong rigid assembly. Each section shall be 90 inches high and shall have 7 gauge steel, 3 inch high removable lifting angle and two 1-1/2 inch high base channels. Complete control center line-ups shall be divided into shipping splits no wider than approximately 60 inches. The lifting angle shall be provided on the top of each shipping split and shall extend the entire width of the shipping split. Lifting angles shall be designed to support the entire weight of the MCC section. Base channels shall be provided with holes to permit bolting the Motor Control Center(s) to the floor. The entire assembly shall be constructed and packaged to withstand all stresses induced in transit and during installation.
- b. Motor Control Centers shall be designed so that matching vertical sections of the same current rating and manufacture can be added later at either end of the line-up without use of transition sections and without difficulty or undue expense. Removable end closing plates shall be provided to close off openings on the end of the Motor Control Center line-up. A removable top plate shall be provided on each vertical section and shall be of one-piece construction for added convenience in cutting conduit holes. The design shall allow use of the standard conduit entrance area without significant sag or deformation of the top plate.
- c. Vertical sections shall be designed to accommodate plug-on units in front-of-board or back-to-back construction as shown on Contract Drawings. Vertical sections housing plug-on units shall be 20 inches wide and shall be 20 inches deep. Wider sections will be permitted only for bolted connection type units not fitting the 20-inch wide sections. Unit mounting area shall be divided into 2 space factor divisions, each approximately 6 inches. NEMA Size 1 and 2 combination starter units shall use only 1 space factor, or 12 inches, of unit mounting space. Vertical sections shall allow for 7 space factors of unit mounting space. Removable blank plates shall cover all unused unit-mounting spaces. Blank plates shall be flanged on all 4 sides and shall be mounted with captive screws. Blank space shall be equipped for future use.
- d. Vertical sections shall be provided with both horizontal and vertical wireways. Sufficient clearances shall be provided in the horizontal wireway so that no restriction is encountered in running wires from the vertical to horizontal wireway. Wireways shall be in accordance with the wireway sections contained in this document.

2. Horizontal Wireways

- a. Horizontal wireways shall be provided in the top and bottom of each vertical section as indicated in the Contract Drawings and shall be arranged to provide full-length continuity throughout the entire assembly. The top horizontal wireway shall have a cross sectional area of not less than 20 square inches with openings between sections of not less than 11-1/2 square inches. The bottom horizontal wireway shall extend through the length and depth of the vertical sections and shall also be provided with openings of not less than 11-1/2 square inches to allow for full length continuity throughout the entire assembly. The bottom horizontal wireway height shall be not less than 9 1/4 inches. Covers for all wireways shall be equipped with captive type screws to prevent loss of hardware during installation. All wireways shall be isolated from the bus bars.

3. Vertical Wireways

- a. A vertical wire trough shall be located on the right -hand side of each vertical section and shall extend from the top horizontal wireway to the bottom of the available unit mounting space. Each vertical wire trough shall have a cross sectional area of not less than 19 square inches and shall be isolated from the bus bars to guard against accidental contact. A separately hinged door having captive type screws shall cover the vertical wire trough to provide easy access to control wiring without disturbing control units.
- b. Reusable wire ties shall be furnished in each vertical wire trough for the purpose of grouping and securely holding wires in place for a neat and orderly installation.

4. Busbars

- a. A continuous main three-conductor horizontal bus shall be provided over the full length of the control center. A fully rated horizontal neutral bus (1200 ampere maximum) shall also be supplied over the full length of the Motor Control Center. When necessary, the bus shall be split to allow for ease in moving and handling. Splice bars will be supplied to join the bus wherever a split has been made. All splice connections shall be made with at least two bolts and shall employ the use of Belleville washers in the connection. Horizontal bus bars shall be mounted edgewise and supported by insulated bus supports.
- b. For distribution of power from the main horizontal bus to each unit compartment, a three-phase vertical bus shall be provided. The vertical bus shall be firmly bolted to the horizontal bus for permanent contact.
- c. The main horizontal and vertical buses shall be made of aluminum and the entire length shall be electrolytically tin plated to provide maximum protection to the bus bars from normal or adverse atmospheric conditions.
- d. Bus supports shall be formed of high strength glass reinforced alkyd material. Bus supports shall have generous surface clearances in the vertical plane to shed dust and maintain dielectric integrity. Bus supports and insulators shall be red to indicate proximity of energized bus parts.
- e. Horizontal and vertical buses shall have continuous current ratings adequate to handle all loads as shown on the one line diagram in the Contract Drawings. Continuous current ratings shall be in accordance with temperature rise specifications established by UL, ANSI, and NEMA standards.

- f. A copper ground lug shall be provided in each incoming line vertical section capable of accepting a #8 to 250 MCM cable. A horizontal copper grounding bus shall be provided in each section of the Motor Control Center. Horizontal grounding bus shall run continuously throughout the control center except where splits are necessary for ease of shipment and handling in which case splice bars shall be provided. Grounding bus shall be tin plated copper and have a cross sectional area equal to 28% of the main horizontal bus cross sectional area. Horizontal ground bus shall be located at the bottom of the Motor Control Center.

5. Bus Barriers

- a. Insulated horizontal and vertical bus barriers shall be furnished to reduce the hazard of accidental contact with the bus. Barriers shall have a red color to indicate proximity of energized buses. Vertical bus barriers shall have interlocking front and back pieces to give added protection on all sides and shall segregate the phases to reduce the possibility of accidental "flash over". Small, separate openings in the vertical bus barriers shall permit unit plug-on contacts to pass through and engage the vertical bus bars. Bottom bus covers shall be provided below the vertical bus to protect the ends of the bus from accidental contact with fish tapes or other items entering from the bottom of the enclosure. Unused plug-on openings in the bus shall have plastic snap-in closing plates for added safety.

6. Main Incoming Lug Compartment

- a. A front accessible main lug compartment shall be provided with suitable main lugs to accommodate the number of cables per phase as indicated on the Contract Drawings. The compartment shall be located in the top most or bottom most unit space of the section to accommodate the user's cables entering the Motor Control Center as indicated on the Contract Drawings. The main incoming lug compartment shall be covered by a hinged door for maintenance access. This door shall be held closed with captive type screws to discourage unauthorized access. (A unit door padlock attachment shall also be provided to lock the door in the closed position with one 5/16 inch diameter shackle padlock. This attachment shall also accept a meter type seal.)

7. Units

- a. Combination starter units shall consist of Size 1 minimum full voltage magnetic starters, autotransformer reduced voltage starters, molded case magnetic-only circuit breakers, and auxiliary control devices, as required and/or shown on the one-line and elementary diagrams. Pilot light assemblies (push-to-test) shall be transformer type. All auxiliary equipment, except that which is specified for mounting on the door, shall be mounted within the compartment. All units shall be provided with unit doors, unit support pans, unit saddles and unit disconnect operators as outlined in this Specification. Each unit compartment shall be enclosed and isolated from adjacent units, buses and wireways except for openings for conductor entrance into units. Units shall be designed and constructed so that any fault will be localized within the compartment. All units shall be UL listed for minimum of 65,000 amperes RMS symmetrical fault withstand ability.
- b. Plug-on combination starter units of the same NEMA size and branch feeder units of the same trip size shall be readily interchangeable with each other. It shall be

possible to withdraw each plug-on unit to a de-energized position with the unit still being supported by the structure. It shall be possible to lock the unit in this position with one padlock.

- c. Full voltage non-reversing combination starter units shall have the following minimum space factor requirements, shall be provided with plug-on connections and shall be provided with ample space for customer wiring room:

	Circuit Breaker Space Factor
Size 1	1
Size 2	1
Size 3	1-1/2
Size 4	2

8. Unit Plug-On

- a. For convenient unit connection to bus bars, unit plug-on contacts shall be provided on the following units:
 - 1) For circuit breaker type units; full voltage starters, size 4 and smaller; auto-transformer reduced voltage starters, size 4 and smaller; part winding reduced voltage starters, size 4PW and smaller; branch circuit units, 225 ampere and smaller.
- b. The plug-on connection for each phase shall be of a high quality two- point connection and shall be designed to tighten around the vertical bus bar during a heavy current surge. For trouble-free connections, the plug-on fingers shall be silver plated and coated with a compound to assure a low resistance connection. Contact fingers shall be of a floating and self-aligning design to allow solid seating onto the vertical bus bars.
- c. Starters NEMA size 4 and larger shall bolt directly to the vertical bus bars, circuit breakers rated higher than 225 amps shall also bolt directly to the bus bars.

9. Unit Doors

- a. Each unit shall have a door securely mounted with rugged concealed-type hinges which allow the door to swing open a minimum of 112 degrees for unit maintenance and withdrawal. Doors shall be fastened to the structure so that they remain in place when a unit is withdrawn and may be closed to cover the unit space when the unit has been temporarily removed. Doors shall be held closed with captive type screws which engage self-aligning cage nuts. These screws shall provide at least two threads of engagement to hold doors closed under fault conditions. Each unit door shall be interlocked with it's disconnect mechanism to prevent the door from opening when the unit is energized. A defeater mechanism shall be provided for defeating this interlock by authorized personnel. Removable door panels held with captive type screws shall be provided on starter unit doors for mounting push buttons, selector switches or pilot lights. Blank door panels capable of accepting future pilot devices shall be furnished when pilot devices are not originally specified for starter units. Each starter unit door shall house an external low-profile overload reset button for resetting the overload relay in the event of tripping.

10. Unit Support Pan

- a. Each plug-on unit shall be supported and guided by a tilt and lift-out removable pan so that unit rearrangement can be easily accomplished. For easy unit installation and rearrangement, transfer of this unit support pan from one location to another shall be accomplished with ease after the control unit and door have been removed.

11. Unit Saddles

- a. Each plug-on unit shall have a saddle of 14 gauge hot rolled steel designed and constructed to physically isolate the unit from the bus compartment and adjacent units. Saddles shall be equipped with captive, self-aligning mounting screws which shall hold the unit securely in place during shipment. Flanged edges shall be provided on each saddle to facilitate unit removal.

12. Disconnect Operators

- a. An external operator handle shall be supplied for each switch or breaker. This mechanism shall be engaged with the switch or breaker at all times regardless of unit door position to prevent false circuit indication. The operator handle shall be color coded to display red in the "ON" position and black in the "OFF" position. The operator handle shall have a conventional up-down motion and shall be designed so that the down position will indicate the unit is "OFF". For added safety it shall be possible to lock this handle in the "OFF" position with up to three padlocks. The operator handle shall be interlocked with the unit door to prevent switching the unit to "ON" while the unit door is open. A defeater mechanism shall be provided for the purpose of defeating this interlock by a deliberate act of an electrician should he desire to observe the operation of the operator handle assembly or the unit components. Operators shall not be higher than 6'-6" above finished floor elevation, as installed.

13. Wiring

- a. The motor control center wiring shall be NEMA Class II, Type B.
- b. All wiring to the terminal strips from outside the MCC shall be made with spade type terminals of the proper size and rating for the wire used. Pull apart terminal blocks shall be provided in unit spaces of motor starters that contain field wiring energized from a remote source to comply with NEC Article 430-74.
- c. Optional sleeve type wire markers shall be provided throughout, tagged to agree with reviewed shop drawing wiring schematics.

14. Finish

- a. The finish shall be manufacturer's standard gray enamel applied over a rust inhibiting phosphate primer.

15. Optional Modifications and Accessories

- a. Additional modifications and accessories shall be as listed and specified on the Contract Drawings.

16. Identification

- a. A control center identification nameplate describing section catalog numbers and characteristics shall be fastened on the vertical wire trough door of every section. Each control center unit shall have its own identification nameplate fastened to the unit saddle. These nameplates shall have suitable references to factory records for efficient communication with supplier. Each control center unit shall also have an engraved Bakelite nameplate fastened to the outside of each unit door inscribed as written on the Contract Drawings for ease in identification and for making changes when regrouping units. An overall structure nameplate is also required.

17. Metering

- a. All voltmeters, ammeters, wattmeters, current transformers, potential transformers and phase selector switches shall be furnished as shown on the Contract Drawings. Meter accuracy shall be + 1 percent. Solid state metering shall be as specified this section.

C. Starters and Overcurrent Protective Devices

1. Magnetic Starters

- a. Magnetic starters shall be furnished in all combination starter units unless otherwise indicated on Contract Drawings. Starter Sizes 1 through 4 shall employ the use of a bell-crank lever design to transform vertical action of the armature into horizontal action of the contact carriers and thus minimize contact bounce and produce extra long contact life. Thermal overload relays on starters shall be ambient temperature compensated solid state type with manual reset.

2. Circuit Breakers

- a. Type FA, KA, LA, MA and PA molded case circuit breakers shall be furnished in all starter and branch feeder units using circuit breakers as a disconnect means. All circuit breakers will have a push-to-trip test feature for testing and exercising the circuit breaker trip mechanism.
- b. Where the highest continuous current trip setting for which the actual overcurrent device installed in a circuit breaker is rated or can be adjusted is 1200A provide Alternate Maintenance Setting (AMS) switch and Restraint Interface Module (RIM) to provide energy reducing maintenance switching in accordance with section 240.87 of the 2014 NEC. Provide local status indication. AMS switch shall set the circuit breaker trip to "no intentional delay" to reduce clearing time while worker is working within the arc-flash boundary.
- c. *Breakers shall be provided with auxiliary contacts to monitor breaker position.*

3. Control Devices

- a. Provide selector switches, push buttons, relays, timers, etc., as shown in the control circuits in the Drawings.
- b. Provide properly sized control transformer.
- c. Pilot light assemblies shall be LED type.

D. Lighting Panelboards

1. Lighting panelboards shall be as specified in other section of this Division. Lighting panelboard unit doors shall be held closed with captive latches that may easily be operated without the use of tools, i.e., wing nuts, handle, etc.

E. Transformers

1. 480 volt primary, 120/240 volt or 120/208 volt secondary transformers shall be as specified in other sections of this Division.

F. Power Factor Correction Capacitors

1. UL listed power factor correction capacitors shall be provided in the Motor Control Centers where indicated on the Contract Drawings, wired into each motor starter for all 3 phase process equipment as indicated in the one-line diagram in the Drawings, so that they are switched with the motors. They shall be wired in accordance with the NEC and sized based on proper motor rpm for correction to 90-95 percent, from no load power factor. Totally enclosed capacitors mounted atop Motor Control Centers shall be utilized in those instances where their addition within unit spaces would substantially increase the length of structures from that shown on the Contract Drawings. Capacitors shall be fused, equipped with discharge resistors and pilot light assemblies visible without opening any doors to indicate blown fuses.

G. Electronic Circuit Monitors

1. Circuit Monitor Installation

- a. Electronic circuit monitors shall be installed by the equipment manufacturer for all circuits as indicated on the Contract Drawings.
- b. All control power, CT, PT, and communications wire shall be factory installed and harnessed within the lineup.
- c. Where external circuit connections are required, terminal blocks shall be provided and the manufacturer's shop drawings must clearly identify the interconnection requirements, including wire type, to be used.
- d. This equipment shall be Square D Power Logic, Westinghouse IQ Data Plus II, General Electric, or equal.

2. Circuit Monitor Characteristics

- a. The electronic circuit monitors shall accept inputs from industry standard instrument transformers (1 20 VAC secondary PTs and 5A secondary CTs).
- b. The current and voltage signals shall be digitally sampled at a rate high enough to provide accurate rms sensing and valid data for waveform analysis beyond the 30th harmonic (fundamental of 60 Hz).
- c. All setup parameters required by the circuit monitors shall be stored in nonvolatile memory (no battery backup) and retained in the event of a control power interruption.
- d. The circuit monitor shall also maintain, in nonvolatile memory, a maximum and minimum value for each of the instantaneous values reported, as well as the time and date of the highest peak for all of the peak demand readings.

- e. The circuit monitors shall be equipped with an integral LED display to provide local access to metered quantities.
- f. The following instantaneous readings shall be reported by the circuit monitor:
 - 1) Frequency
 - 2) Temperature
 - 3) Current, per phase rms
 - 4) Current, 3-phase average rms
 - 5) Current, apparent rms
 - 6) Voltage, phase-to-phase & phase-to-neutral
 - 7) Power factor, per phase
 - 8) Power factor, 3-phase total
 - 9) Real power, 3-phase total
 - 10) Reactive power, 3-phase total
 - 11) Apparent power, 3-phase total
- g. The following demand readings shall be reported by the circuit monitor:
 - 1) Average demand current, per phase
 - 2) Peak demand current, per phase
 - 3) Average demand, real power
 - 4) Predicted demand, real power
 - 5) Peak demand, real power
- h. The following energy readings shall be reported by the circuit monitor:
 - 1) Accumulated energy
 - 2) Accumulated reactive energy

3. Waveform Capture Capability

- a. All electronic circuit monitors shall include waveform capture capability.
- b. Upon a user-initiated command, the circuit monitor shall capture and store, in nonvolatile memory, 3-phase voltage and current samples consisting of 256 data points each.
- c. These data points shall represent at least four cycles of each current or voltage waveform.
- d. These samples shall be evenly gathered from three voltage and three current phases such that the original power signals with proper magnitude and phase relationships may be reconstructed.
- e. It shall be possible to recreate the original power signal from the stored data with sufficient accuracy such that steady-state power harmonic analysis will provide valid information on harmonic content for up to the 30th harmonic of the fundamental power frequency.

4. Connecting and Networking Circuit Monitors

- a. All data and calculated values stored in the circuit monitor shall be accessible to external devices by means of an RS485/RS422 serial communications port built into the circuit monitor.

- b. It shall be possible to connect from one communications port to another such that up to 16 electronic circuit monitors may be connected to form a continuous string extending up to 10,000 feet.
- c. These strings shall form individual data transfer networks that comply with the RS485 multi-drop communications standards.
- d. Communication rates on this network shall be adjustable up to 19.2 Kbaud to ensure acceptable throughput of data.
- e. It shall be possible to connect up to 100 of these networks together by means of network interface modules to form a high speed power monitoring, data acquisition and control network.

5. System Display

- a. The circuit monitor shall include an LED readout which will allow local display of the following electrical parameters:
 - 1) Current, per phase rms
 - 2) Voltage, phase-to-phase & phase-to-neutral
 - 3) Real power, 3-phase total
 - 4) Reactive power, 3-phase total
 - 5) Apparent power, 3-phase total
 - 6) Power factor, 3-phase total & per phase
 - 7) Frequency
 - 8) Peak demand current, per phase
 - 9) Peak demand, real power
 - 10) Accumulated Energy, (MWH and MVARH)
- b. Reset of the following electrical parameters shall also be allowed from the front of the circuit monitor:
 - 1) Peak demand current
 - 2) Peak demand power
 - 3) Energy (MWH)
 - 4) Reactive energy (MVARH)
- c. Circuit monitor setup for system requirements shall be allowed from the front of the circuit monitor. Setup provisions shall include:
 - 1) CT rating (xxxx:5)
 - 2) PT rating (xxxx:120)
 - 3) System type (3-wire and 4-wire)
 - 4) Demand interval (5-60 min.)
- d. All reset and setup functions shall be keyswitch-protected to prevent unauthorized/accidental changes.
- e. System display units shall be installed by the manufacturer in the equipment as indicated on the drawings.
- f. The system display units shall be flush mounted on door panels.
- g. The system display unit shall utilize a 4-line by 20-character, high contrast LCD technology display with backlighting to provide high reliability and superior readability in all light conditions.

H. Allen Bradley Powermonitor 5000

1. The power monitors shall be microprocessor-based with a base sampling frequency rate of at least 5.4 kHz. Measured parameters (volts, amps, and frequency) shall have accuracy in percent of full scale of 0.2% and all calculated parameters shall be 0.2%.
 2. Refresh rate for display and transmission of measured parameters shall be user configurable.
 3. The metering unit shall contain self-powered status inputs capable of detecting dry contact closure.
 4. The metering unit shall be capable of directly communicating via Ethernet and DeviceNet without any modifications. Intermediate bridges or gateways are not acceptable.
 5. The meter shall be supplied with either a unified or separate display unit. If a separate unit is supplied, the display shall be rated for NEMA 4 indoor use. The separate display unit shall be connected to the base unit utilizing Category 5 or Category 6 cable. All metering data, logs, and harmonic information contained within the meter shall be accessible via the display unit. Provide necessary Ethernet switch to also connect to the Plant SCADA system.
 6. The following logs shall be contained within the unit with a nominal date/time stamping resolution of 0.01 seconds. The unit shall maintain all logs and configuration parameters in the event of loss of control power.
 - a. Min/Max log capable of retaining and displaying the minimum- and maximum-recorded values for all real-time power system parameters.
 - b. Snapshot log – A user configurable time/event driven based log.
 - c. Event logs – Configurable to user defined measurable events. The unit shall be capable of retaining the most recent 100 events.
 7. Setpoints. The metering unit shall have the ability to date/time stamp excursions beyond user-defined values for multiple parameters. These setpoint excursions shall be capable of triggering a log entry into the event log, triggering an oscillographic recording, and/or energizing one of the meter's onboard relays.
 8. Oscillographic waveforms shall be available as (1) simultaneous, with all channels recorded for at least two cycles; and (2) user configurable with at least 75% cycles of pre-trigger data. Oscillographic recordings can be either manually triggered or internally triggered from a setpoint or event.
 9. The metering unit and all accessories shall be listed and/or certified by UL, CSA, and CE and built in accordance with ISO 9000.
 10. The unit shall have a flash upgradable firmware for higher power quality functionality.
 11. The unit shall be directly accessible by a Human Machine Interface (HMI RSVIEW) for data display.
 12. The unit shall detect sags and swells and shall calculate amplitude and percent distortion for harmonics 1 – 41.
 13. Provide necessary software for configuration and communication.
- I. Key Interlock Kit: Externally mounted to prohibit circuit-breaker operation; key shall be removable only when circuit breaker is in off position. Key interlocking shall be provided on devices as shown on contract drawings.

PART 3 - EXECUTION

3.1 INSTALLATION/APPLICATION/ERECTION

A. Motor Control Centers

1. Ends of MCC(s) shall be closed with 1/4" mesh hardware cloth and galvanized or aluminized insect screen or sill covers to prevent the entrance of rodents and large insects into the MCC housing(s).
2. Each MCC shall be provided with a 4" high concrete pad.
3. One inch air space (min.) shall be allowed between back of MCC(s) and wall surface.
4. Lifting-eyes in tops of MCC(s) section shall be removed (and retained) and the threaded openings closed with stainless cap screws and plastic washers or plastic seals provided for that purpose by the MCC(s) manufacturer.
5. In installations where conduit runs to electrical equipment emanate from the top of MCC(s) there shall be provided additional wiring space in the form of metal trough(s) of the same metal housing(s) dimensions and details. Trough(s) shall be provided by the manufacturer of the MCC(s).

3.2 EXTRA STOCK/SPARE PARTS

A. Provide the following spare parts:

- 10 fuses of each type/amperage used
- 1 LED pilot light for each five (5) pilot light assemblies provided
- 1 control transformer for each size utilized

END OF SECTION 262419

SECTION 262700 - WIRE CONNECTIONS AND CONNECTING DEVICES

PART 1 - GENERAL

1.1 SCOPE OF WORK

- A. Wire connection and connecting devices shall be as herein specified.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

- A. Connectors, Lugs, etc. – T & B, Anderson, Burndy, or equal.
- B. Ties and Servings – T & B, Panduit, or equal.
- C. Termination and splice connectors – 3M Scotchlok, Anderson, T & B, Burndy, or equal.

2.2 MATERIALS

- A. Wire Splicing and Terminations (600 Volts and Below)

- 1. Electrical Terminal and Splice Connectors (#22 - #4 AWG)

- a. Terminals and splice connectors from #22 - #4 AWG shall be compression types with barrels to provide maximum conductor contact and tensile strength. Performance, construction, and materials shall be in conformance with UL standards for wire connectors and rated for 600 volts and 105 degrees Celsius.
- b. Connectors shall be manufactured from high conductivity copper and entirely tin plated. Terminal barrels shall be serrated on the inside surface and have a chamfered conductor entry. Terminals shall have funnel entry construction to prevent strand fold-back. All barrels shall be brazed seam or seamless construction.
- c. Spade type terminals shall be sized for the appropriate stud and shall be locking type that snap firmly onto studs with a close fit for maximum retention. Spade type terminals shall be insulated with an insulation suitable for maintaining a high dielectric strength when crimped and be made from nylon, PVC, or equal.

- 2. Electrical Lugs and Connectors (#6 AWG - 1000 Kcmil)

- a. Lugs and splice connectors from #6 AWG - 1000 Kcmil shall be compression types with barrels to provide maximum conductor contact and tensile strength. They shall be manufactured from high conductivity copper and entirely tin plated. They shall be crimped with standard industry tooling. The lugs and connectors must have a current carrying capacity equal to the conductors for which they are rated and must also meet all UL requirements. All lugs above 4/0 AWG shall be 2

hole lugs with NEMA spacing. The lugs shall be rated for operation through 35 KV. The lugs shall be of closed end construction to exclude moisture migration into the cable conductor.

3. Twist-on Wire Connectors (#22 AWG - #10 AWG)
 - a. All twist-on wire connectors must have a corrosion resistant spring that is free to expand within a steel jacket. The steel jacket must be insulated with a flexible vinyl jacket capable of withstanding 105 degrees Celsius ambient temperatures and of sufficient length to cover wires that are inadvertently overstripped.
 - b. Each connector size must be listed by UL for the intended purpose and color coded to assure that the proper size is used on the wire combinations to be spliced. The connectors must be compatible with all common rubber and thermoplastic wire insulations.
4. Solderless/re-usable lugs shall be used only when furnished with equipment such as control panels, furnished by others, where specification of compression type lugs is beyond the Contractor's control. In the event their use is necessary, the Contractor shall be responsible for assuring that they are manufactured to NEMA standards, with proper number and spacing of holes and set screws.

PART 3 - EXECUTION

3.1 INSTALLATION, APPLICATION, & ERECTION

A. Insulation of Splices and Connections

1. Connections/splices with a smooth even contour shall be insulated with a conformable 7 mil thick vinyl plastic insulating tape which can be applied under all weather conditions and is designed to perform in a continuous temperature environment up to 105 degrees Celsius. The tape shall have excellent resistance to abrasion, moisture, alkalis, acids, corrosion, and varying weather conditions (including sunlight). The tape shall be equal to Scotch 33+ and shall be applied in conformance with manufacturer's recommendations. In addition, it shall be applied in successive half-lapped layers with sufficient tension to reduce its width to 5/8 of its original width. The last inch of the wrap shall not be stretched.
2. Connections/splices with irregular shapes or sharp edges protruding shall be first wrapped with 30 mil rubber tape to smooth the contour of the joint before being insulated with 33+ insulating tape specified in the previous paragraph. The rubber tape shall be high voltage (69 KV) corona-resistant based on self-fusing ethylene propylene rubber and be capable of operation at 130 degrees Celsius under emergency conditions. The tape must be capable of being applied in either the stretched or unstretched condition without any loss in either physical or electrical properties. The tape must not split, crack, slip, or flag when exposed to various environments. The tape must be compatible with all synthetic cable insulations. The tape must have a dissipation factor of less than 5 percent at 130 degrees Celsius, be non-vulcanizing, and have a shelf life of at least 5 years. The rubber tape shall be applied in successive, half-lapped wound layers and shall be highly elongated to eliminate voids. Other manufacturer's recommendations on installation shall

be adhered to. The rubber tape shall be equal to Scotch 23 or 130C electrical splicing tape.

3. Splices made in wet or damp locations shall be made submersible and watertight with special kits made for the application and compatible with type of cables employed.

B. Connection Make-up

1. Connections of lugs to bus bars, etc., shall be made up with corrosion resistant steel bolts having non-magnetic properties with matching nuts, and shall utilize a Belleville spring washer (stainless steel) to maintain connection integrity. Connections shall be torqued to the proper limits. Prior to bolting up the connection, electrical joint compound shall be brushed on the contact faces of the electrical joint.
2. All motor lead connections shall be made up to match the type of lead furnished on the motor. If the lead is not lugged, then twist-on wire connectors may be used. To prevent possible vibration problems, twist-on connectors shall be taped after installation.
3. All lugged motor lead connections (excluding motors over 200 horsepower) shall be made up using ring tongue compression lugs with proper size stainless steel nuts and bolts. Belleville type spring shall be used to maintain tension on the connections. The connections shall then be insulated using the procedure described for irregular shapes, utilizing rubber tape in conjunction with vinyl electrical tape.
4. At the time of final inspection, the Engineer may request the Contractor to disassemble 3 randomly selected motor lead connections in the Engineer's presence, to assure conformance with these Specifications.
5. The Contractor shall include all necessary tools, materials, and labor in his bid for disassembly of the connections and for remaking them with new insulating materials after inspection.

END OF SECTION 262700

SECTION 262913 - MOTOR CONTROL

PART 1 - GENERAL

1.1 SCOPE OF WORK

- A. Contractor shall furnish and install motor control equipment as specified herein and as shown on the Drawings.

1.2 SUBMITTALS

- A. Motor control equipment shall be new and the equipment of one manufacturer. Each component is specified by a particular trade name; however, this does not relieve the Contractor of the responsibility of submitting descriptive literature and Shop Drawings for review of all components.
- B. Shop drawings, including layout drawings, complete schematic and composite wiring diagrams, control circuit wiring diagrams and descriptive literature shall be submitted to the Engineer for review. Service manuals shall be submitted on all equipment and shall be bound in 3-ring loose-leaf binders. The manuals shall also include information on accessories such as timers, etc., built in the controls.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

- A. Control Equipment
 - 1. Allen Bradley, Eaton, General Electric, Square D, or equal.
- B. Timers
 - 1. Paragon, Tork, Intermatic, or equal.

2.2 INDIVIDUALLY MOUNTED MOTOR CONTROL DEVICES (480, 208, OR 120 VOLT)

- A. General
 - 1. All motor control equipment shall be new and the product of 1 manufacturer. All individually mounted motor starters, push-button stations, latchout stations, etc., indoors shall be mounted on a 1 inch galvanized unistrut, 1 inch Kindorf channel, or equal to provide an air space at rear. Outside mounted equipment shall utilize 1-inch stainless steel strut as required in 260529.
- B. Starters

1. General

- a. All starters shall be of the voltage rating, type, and sized for the motor size shown in these Specifications and/or on the Contract Drawings. For enclosure type see the Contract Drawings. All starters shall be of the magnetic type. Should a piece of electrically driven equipment be furnished with a larger motor than shown on the Contract Drawings, the proper size combination starter shall be provided for the equipment supplied, at no extra cost to the Owner.
- b. See the Contract Drawings for the auxiliary equipment to be furnished. Maximum control voltage shall be 120 volts, a-c. Minimum starter size shall be NEMA Size 1.

2. Overloads

- a. Each starter shall have a thermal overload device in each ungrounded leg. The overload shall be of the "Ambient compensated Bi-metallic", thermal element type. All overloads shall be of the manual reset type and shall be reset without opening the starter enclosure. Heaters will be sized for the proper temperature rise of the motor that it is being used on. Heaters for general service shall be of the standard trip type. All integral horsepower motors, 15 horsepower and over, require thermal elements embedded in the windings. See Motor Specifications, this division.

3. Contactors

- a. All contactors for motor starters shall be of the a-c magnetic type with "undervoltage" protection when used in conjunction with momentary contact push-button control and "undervoltage" release when used with maintained contact push-button control.
- b. Contactor size shall be in accordance with NEMA Standards for the motor controlled and shall be horsepower rated.
- c. Contacts shall be of the heavy duty silver-to-silver type and shall be totally enclosed in individual arc quenching chambers. Contacts shall be easily accessible for replacement.
- d. The contactor coil shall be of the vacuum impregnated or epoxy resin type, moisture resistant and corrosion proof.

C. Control Stations

1. General

- a. Control stations shall be heavy duty, maintained or momentary contact type, as noted on the Contract Drawings. Contacts shall be silver alloy, double break type. The number and marking of controls shall be as shown on the Contract Drawings. Enclosures shall be NEMA 1 for indoor and NEMA 4X for outdoor mounting, unless otherwise noted on the Contract Drawings. All control stations shall operate on 120 volt, a-c maximum, unless otherwise designated on the Contract Drawings. "Latch-out" facilities shall be provided where called for in these Specifications and/or on the Contract Drawings.

2. Maintained Contact

- a. Maintained contact control switches shall be marked “On” and “Off”. The button pushed shall remain in and push the other button out until the other button is pushed. In general, they are to be used for hand control of motors which have to operate continuously and restart whenever power is off then resumed, without any manual operator. This is needed for motors which have to operate continuously in the absence of an operator.

3. Momentary Contact

- a. Momentary contact control push-button switches shall be marked “start” and “stop”. Pushbuttons shall spring out whenever pushed. If the circuit is dropped for any reason, operation cannot be resumed until a “start” push-button is pushed. In general, they are to be used for hand control of motors which are desired to operate intermittently in the presence of the operator and stop and start independently from more than one parallel control location.

D. Circuit Breakers

1. Circuit breakers shall be molded case type. Trip elements of multi-pole breakers shall be effectively insulated from one another. Multi-pole breakers shall be designed so that an overload on any one pole shall open all poles simultaneously.
2. The breaker operating mechanism shall be the quick-make, quick-break type and shall be entirely trip free to prevent the contacts being held in a closed position against a short circuit.
3. Breakers not used with combination motor starters shall be of the thermal magnetic type with a thermal bimetallic element for time delayed overload protection and a magnetic element for short circuit protection.
4. The breaker shall be trip indicating with the trip position midway between the “On” and “Off” positions.
5. Breakers for combination starters shall be 100 amp frame or larger. All breakers for combination starters shall have an adjustable magnetic trip element of the motor circuit protector type.
6. Breakers for combination starters shall be F frame or larger. All breakers shall have adjustable magnetic trip elements. Circuit breakers K frame and larger shall have interchangeable thermal-magnetic trip elements.

E. Selector Switches

1. 3-position or 4-position type selector switches shall be of oil-tight construction. The switch must not have a spring loaded return. It shall be of the “quick-make”, “quick-break” type.

F. Manual Motor Starting Switches

1. Manual motor starting switches for the control of fractional horsepower motors shall be single pole, and shall be provided with a thermal heater of the correct size for the load controlled. Each starting switch shall be mounted where shown on the Contract Drawings. Where they are used for rotating equipment such as grinders, they shall be equipped with low voltage protection, and required manual reset after power failure. As

an alternate to low voltage protection built-in, a "Safety Restart Plug" may be utilized, available from Mitchell Instrument Company.

G. Limit Switches

1. Where limit switches are called for in these Specifications, they shall be the double pole, oil-tight type, suitable for the type mounting required.

H. Alarm Horns

1. Alarm horns, where called for on the Contract Drawings, shall be weatherproof, suitable for surface mounting and shall be provided with a silence button. Alarm horn shall be Edwards 876 series with 103dB at 10 feet, Federal, Signal, or equal.

I. Timing Relays

1. Time delay relays shall have an adjustable timing range as shown on the Contract Drawings. The time delay shall be after energizing timer coil. Timing relays shall be Agastat, Square D, or equal.

J. Pilot Lights

1. Pilot lights shall be LED style with green lenses for on indication, and red for alarm indication.

2.3 TIMERS

- A. Timers for various services required in the motor control equipment shall be Paragon, Tork or equal as indicated in control circuits shown on the Drawings.
- B. Timers requiring tripping pins shall be supplied with enough pins to completely fill all locations on the dial face.

PART 3 - EXECUTION

3.1 EXTRA STOCK/SPARE PARTS

- A. Provide the following spare parts:

- 10 fuses of each type/amperage used
- 1 LED pilot light for each five (5) pilot light assemblies provided
- 1 control transformer for each size utilized

END OF SECTION 262913

SECTION 264313 – SURGE PROTECTIVE DEVICES

PART 1 - GENERAL

1.1 SCOPE OF WORK

- A. The specified unit(s) shall provide effective high energy surge suppression, surge current diversion, and high frequency noise attenuation in all electrical modes for equipment connected downstream from the SPD unit. The unit(s) shall be connected in parallel with the facility's wiring system.
- B. All products that are submitted according to these specifications will be required to meet this specification in its entirety. Any product that is submitted and does not comply with all parts of this specification will be subject to rejection.
- C. Instrumentation Transient Suppressors
 - 1. Transient suppressors are intended for use on all instrument control loops for power and signal protection on transmitters/receivers, etc., and shall be furnished and installed as specified in Division 33.
- D. Type 1 SPD (Secondary Power Arrestors)
 - 1. Type 1 Surge Protective Devices shall be furnished and installed on all control equipment supplied as outlined on the Contract Drawings.
- E. Type 2 SPD (Transient Voltage Surge Suppressors)
 - 1. Type 2 Surge Protective Devices shall be furnished and installed in all Power Distribution Panels and on all equipment supplied having solid state components as the central control/monitoring device. These shall included, but not be limited to, computer systems, level control systems, and/or variable speed equipment. They shall be shown on the Drawings where required.

1.3 SUBMITTALS

- A. Provide UL1449 Third Edition listing documentation including Voltage Protection Ratings for all modes of protection, Short Circuit Current Rating (SCCR), Maximum Continuous Operating Voltage Rating (MCOV), and Nominal Discharge Current (I-n) Rating.
- B. Indicate the type of internal or external fusing that is incorporated in the SPD system and what impact the fusing has on the performance of the device with respect to surge capacity and clamping levels.
- C. Provide independent third party testing documentation demonstrating that the SPD is capable of surviving the specified maximum $8 \times 20 \mu s$ surge current pulse without suffering performance degradation or more than 10 percent.

- D. Submittals shall include shop drawings including manufacturer installation instruction manual and line drawings detailing dimensions and weight of enclosure, internal wiring diagram illustrating all modes of protection in each type of SPD required, wiring diagram showing all field connections and manufacturer's recommended wire and breaker sizes.

1.4 STANDARDS

- A. Underwriters laboratories 1449 - (UL 1449 3rd edition or current safety standard for transient voltage surge suppressors)
 - 1. Underwriters laboratories 1283 - (UL 1283 listed as an electromagnetic interference filter that provides noise attenuation)
 - 2. Underwriters laboratories 67 - (UL 67 internal integration of SPD in panelboard)
- B. National electrical code 2008 rev. - (NEC article 285 SPD installation practice/NEC article 250 grounding)
 - 1. NFPA-780 and CSA - (National Fire Protection Association)
 - 2. ISO 9001:2000 - quality standard / military standards (mil-std 220a)
- C. IEEE (Institute of Electrical and Electronic Engineering Inc.) C62.41.1 and C62.41.2 – 2002 rev. - (system shall be designed to meet C62.41)
 - 1. IEEE C62.41.2-2002 section 7.2 long duration 10 x 1,000 μ sec test to be compliant if the device exhibits less than 10 percent deviation from initial readings. Units must be tested to withstand and pass the 10 x 1,000 μ sec test
 - 2. IEEE C62.45 – 2002 rev. - (system shall be tested to meet the C62.45)
 - 3. Category A & B - (0.5 μ s x 100 kHz ring wave)
 - 4. Category B3 bi-wave - (8 x 20 μ s at 3,000 amperes and 1.2 x 50 μ s at 6,000 volts)
 - 5. Category C3 bi-wave - (8 x 20 μ s at 10,000 amperes and 1.2 x 50 μ s at 20,000 volts)
- D. CBEMA (ITIC) and IEC - (Computer Business Equipment Manufacturers Association or Information Technology Industry Council and International Electrotechnical Commission define clamping voltage tolerance guidelines for sensitive equipment)
- E. All manufacturers must comply with above listed standards and any current revisions of industry standards. All products that do not comply with current industry standards will not be accepted.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

- A. Type 1 SPD (Secondary Power Arrestors)
 - 1. Dale, General Electric, or equal.

B. Type 2 SPD (Transient Voltage Surge Suppressor)

1. Atlantic Scientific Corporation, LEA International, Current Technology, Advanced Protection Technologies, or equal.

2.2 EQUIPMENT

A. Type 1 SPD (Secondary Power Arrestors)

1. The arrestor shall be hermetically sealed with pre-ionized spark gap. The unit shall be capable of repeated overvoltages without significant change in breakdown level or insulation resistance. The arrestor shall be capable of mounting in any position and shall be capable of mounting through a box knockout with standard locknuts, and shall be weatherproof.
2. Capacitance shall be less than 50 picofarads, and insulation resistance shall be at least 100 megohms. Maximum arc-over with 10 KV/micro second rise time pulse applied shall be 1,500 volts. The arrestor shall be capable of withstanding repeated application of 10 kiloampere current surges and extinguish power-follow current in 2 cycle or less. Maximum voltage between terminals shall be 2,500 volts when conducting 10 kiloampere current surges.
3. Operating temperature range shall be -40 degrees Celsius to +75 degrees Celsius.

B. Type 2 SPD (Transient Voltage Surge Suppressors)

1. The nominal operating voltage and configuration shall be as indicated on the contract drawings.
2. Declared Maximum Continuous Operating Voltage (MCOV) shall be greater than 115 percent of the nominal system operating voltage and in compliance with test and evaluation procedures outlined in the nominal discharge surge current test of UL1449 3rd Edition.
3. SPD shall be UL labeled with 20kA Inominal (I-n) for compliance to UL 96A Lightning Protection Master Label and NFPA 780.
4. The system shall provide a noise filtering system capable of attenuating noise levels produced by electromagnetic interference and radio frequency interference. The system's filtering characteristics shall be expressed in decibels (dB) of attenuation per NEMA LS1 publication. The noise filtering system shall also be UL 1283 listed as an Electromagnetic Interference Filter.
5. SPD shall be UL labeled with 200kA Short Circuit Current Rating (SCCR). Fuse ratings shall not be considered in lieu of demonstrated withstand testing of SPD, per NEC 285.6.
6. Unit shall have not more than 10 percent deterioration or degradation of the UL1449 3rd Edition Voltage Protective Rating (VPR) due to repeated surges.
7. The unit shall be UL 1449 3rd Edition Listed. The UL 1449 3rd Edition voltage protection ratings (VPR) for the unit including integral disconnect shall be equal to or below the following values:

UL 1449 3 rd Edition Voltage Protection Ratings (VPR)				
System Voltage	Mode of Protection			
	L-N	L-G	N-G	L-L
120/240	700	700	900	1000
120/208	700	700	500	700

UL 1449 3 rd Edition Voltage Protection Ratings (VPR)				
System Voltage	Mode of Protection			
	L-N	L-G	N-G	L-L
277/480	1000	1200	1200	1800

8. The maximum single-pulse surge current capacity per mode shall be verified through testing at an independent third party testing facility and shall be conducted per NEMA LS-1-1992 (R2000), paragraphs 2.2.9 and 3.9. The unit shall be tested in all modes at rated surge currents and all tested modes shall be from the same test sample. This test shall include all components of the system, including disconnects (if applicable), fusing, and monitoring as a completed assembly. Individual component testing, module testing only, or subsystem testing of the unit for compliance with this section will not be acceptable. Testing that causes damage to the device, fuse operation, or voltage clamping performance degradation by more than 10 percent is not acceptable.
9. The fusing elements must be capable of allowing the suppressor's rated single impulse current to pass through the suppressor at least one time without failure. The system shall be tested to 1,000 sequential per C62.45-2002 section B.38 referencing C62.41.1 and C62.41.2 category C3 combination wave transients. The category C3 combination wave is defined as a 1.2 x 50 microsecond wave at 20,000 volt open circuit voltage waveform and 8 x 20 microsecond wave at 10,000 ampere short circuit current waveform. In addition, the system components shall be tested repetitively 1,000 times testing based on an IEEE C62.33 (MOV test) and C62.35 (SAD test) without failure or degradation exceeding ± 10 percent.
10. Service Entrance Suppressors
 - a. Equipment shall be a multi-stage parallel protector rated for 480Y/277. See online diagram and panelboard schedule to confirm voltages. The equipment's minimum surge current capacity shall be 200kA per mode (L-N, L-G, L-L and N-G).
 - b. The system protection modules shall contain a technology that utilizes a symmetrical array of balanced metal oxide varistors (MOV). Each MOV will be individually coordinated to pass UL 1449.
 - c. All primary transient paths shall utilize copper wire, aluminum bus bar and lugs of equivalent capacity to provide equal impedance interconnection between phases. No plug-in module or components shall be used in surge carrying paths.
 - d. Each protection module shall have a visual indicator that signifies that the protection circuitry is on line. The unit shall not be taken off line to verify integrity of system. Redundant status indicators shall be mounted on the front of the door that monitors the system protection circuitry (or be visible through the enclosure front).
 - e. The system shall be modular with field replaceable modules. Modular units shall contain a minimum of one module per phase.
 - f. Equipment shall utilize a NEMA 1 enclosure.
12. Accessories
 - a. Device Monitoring
 - 1) As a minimum, device monitoring shall include: Audible alarm with alarm disable switch, surge counter, and two sets of Form C contacts for remote

monitoring.

b. Integral Disconnect Switch

- 1) The unit shall include an integral safety interlocked disconnect located in the unit enclosure with an externally mounted manual operator. If fuses are included with this switch, the fusing shall not effectively lower the rating of the SPD unit.

PART 3 - EXECUTION

3.1 INSTALLATION/APPLICATION/ERECTION

- A. Where the SPD unit is not specified with an integral safety/disconnect switch an appropriately sized disconnect switch or thermal magnetic breaker shall be installed before and in-line with the SPD. It shall be capable of electrically isolating the SPD from the electrical service for repair without interrupting service to the building. If a safety/disconnect switch is utilized the switch shall be rated for 600VAC. If fuses are included with this switch, the fusing shall not effectively lower the rating of the SPD unit and shall have a minimum interrupt rating of 200kAIC. Connection means utilizing breakers shall be sized at 60A/3P and 30A/3P respectively for service entrance/switchboard/switchgear and branch panelboard units unless otherwise recommended by manufacturer.
- B. The specified SPD system shall be installed with #6 AWG minimum copper conductors tapped from the electrical power distribution system. The conductors are to be as short and straight as practically possible and shall not exceed 5 electrical feet from the power conductor(s) it is protecting for service entrance/switchboard/switchgear units and 1.5 electrical feet for branch panelboard units, and shall avoid any unnecessary or sharp bends. The input conductors are to be twisted together to reduce the SPD system inductance.
- C. The SPD shall be installed following the SPD manufacturer's recommended practices and in compliance with these specifications and all applicable codes.

3.2 WARRANTY

- A. Manufacturer shall provide a full 5-year limited warranty against failure or workmanship defects when installed in compliance to the manufacturer's written installation instructions, UL listing requirements and the National Electrical Code.

END OF SECTION 264313

DIVISION 33

UTILITIES

SECTION 330133 – SEWER FLOW CONTROL

PART 1 - GENERAL

1.1 TEMPORARY BYPASS PUMPING – CONTRACT ALLOWANCE

- A. General: Consult LFUCG and plans for specific bypass pumping requirements. Requirements below are meant to define the Contractor's scope of work regarding the temporary bypass pumping system and to provide informative design criteria to aid the Contractor is coordinating the required bypass pumping scope of work.
1. Refer to Specification Section 012100 for allowance requirements. Bypass pumping equipment rental will be procured through Contract Allowance and Owner Direct PO with project funds.
 2. The Contractor shall engage selected Bypass Pumping Vendor and coordinate delivery and setup of temporary pumping system. Contractor shall assist in loading and unloading of rental equipment.
 3. The Owner will provide a Maintenance Mechanic to operate the temporary bypass pumping facilities when needed.
 4. The temporary bypass pumping facilities shall be designed to convey peak dry weather and wet weather flows from the upstream manholes where existing manhole or sewer tie-ins, replacement, or modifications will be conducted in a manner that will prevent backup of the existing system. The bypass pumping flow will be 10 MGD at 35 ft TDH.
 5. All tie-ins, replacement, or modifications shall be performed during low flow conditions.
 6. To the extent possible, all tie-ins, replacement, or modifications of Work shall be accomplished in no more than one 8-hour period. If Work required extends beyond eight hours or weather causes higher flows in the existing system during the Work, the new Work shall be stopped, and the existing system shall be placed back into service. The new Work shall be properly protected from damage. Any damage to the new Work or damage to surrounding areas caused by the new Work shall be repaired or replaced at the Owner's decision by the Contractor at the Contractor's sole expense.
 7. The Owner will provide all fuel, maintenance materials, parts, and other expendables in order to maintain temporary pumping through the duration of the Work.
 8. The Owner will be responsible for monitoring the pumps and fuel levels while in use.
 9. The bypass pumping system shall be provided with one standby pump equal in capacity to the largest pump on site.
 10. The bypass pumping system shall have an automatic start system that will sense failure of the primary system and switch over automatically to the backup system.
 11. The bypass pumping system shall immediately notify proper personnel when a failure of the bypass pumping system occurs, or a high flow level occurs. This immediate notification shall also occur when the primary system fails and the backup system automatically switches over. Assigned personnel shall be on call 24 hours a day and shall respond to the project site within one hour of the notification.
 12. The Contractor and Owner shall perform an operation demonstration of the temporary pumping system prior to beginning the new Work. The purpose of the operation demonstration is to verify that the temporary pumping system is capable of continuous operation through the duration of the Work without backup of the sewer system and test to ensure that the pipe system is in good condition. Bypass pumping shall be pressure tested to 1-1/2 times the working pressure.

13. Temporary pumping system shall remain fully operational until all modifications are complete and approved by Owner or Engineer.
14. Following successful completion of the new work, Contractor shall remove all temporary pumps, piping and appurtenances arrange for rental equipment pickup by vendor and restore area to proper operation and to the Owner's satisfaction.

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION (NOT APPLICABLE)

END OF SECTION 330133